R E P O R T R E S U M E S

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THE WIGHTMAN ELEMENTARY SCHOOL, NEW LIFE FOR OLD SCHOOLS.
PITTSBURGH DESIGN STUDY.
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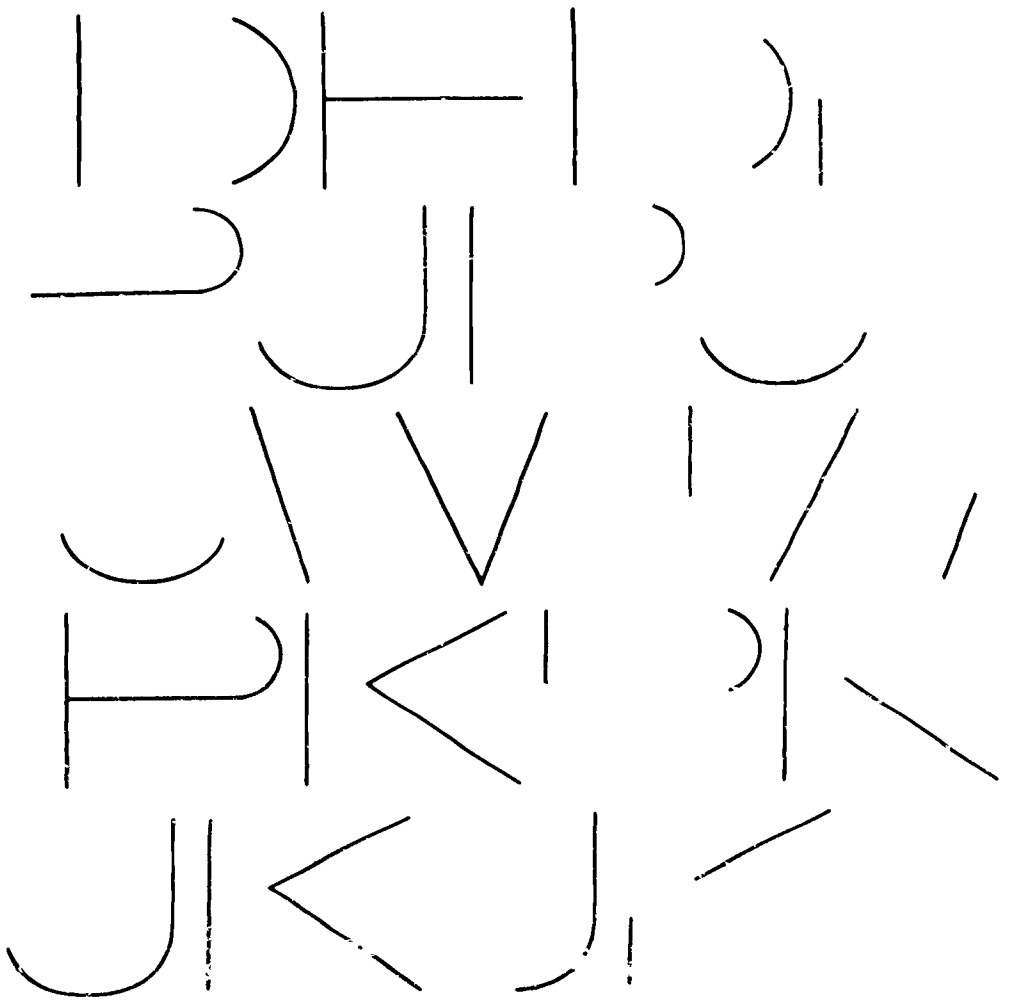
A STUDY OF THE PROBLEMS OF REHABILITATION AND MODERNIZATION OF AN OLD SCHOOL BUILDING IS REPORTED. THE INFLUENCES ON THE DESIGN INCLUDING THE SITE, EDUCATIONAL SPECIFICATIONS, SCHOOL DISTRICT POLICY, LEGAL RESTRICTIONS AND THE EXISTING FACILITY ARE DISCUSSED. ANALYSES OF SPACE AND COSTS ARE PRESENTED. THE QUESTION OF THE INVESTMENT OF THE SCHOOL DOLLAR IN MODERNIZATION OF AN OLD BUILDING OR REPLACEMENT WITH A NEW FACILITY IS POSED FOR THE SCHOOL DISTRICT OFFICIALS. SKETCHES AND MODELS OF PROPOSED DESIGN SOLUTIONS MADE BY ADVANCED ARCHITECTURAL STUDENTS ARE PRESENTED IN THIS REPORT SPONSORED BY THE RESEARCH COUNCIL. (BD)

"New Life for Old Schools"

Pittsburgh Design Study

The Wightman Elementary School

The Wightman Elementary School



The Research Council of the Great Cities Program for School Improvement is an organization of the large cities of the United States whose primary purpose is to conduct studies on problems faced by the Great Cities in their efforts to meet the comprehensive public school needs of their citizens. This School Facilities study is under a grant from the Eductional Facilities Laboratories.

Member Cities:
Baltimore, Boston, Buffalo, Chicago, Cleveland, Detroit, Los Angeles, Memphis, Milwaukee, New York, Philadelphia, Pittsburgh, St. Louis, San Diego, San Francisco and Washington, D.C.

The Problem

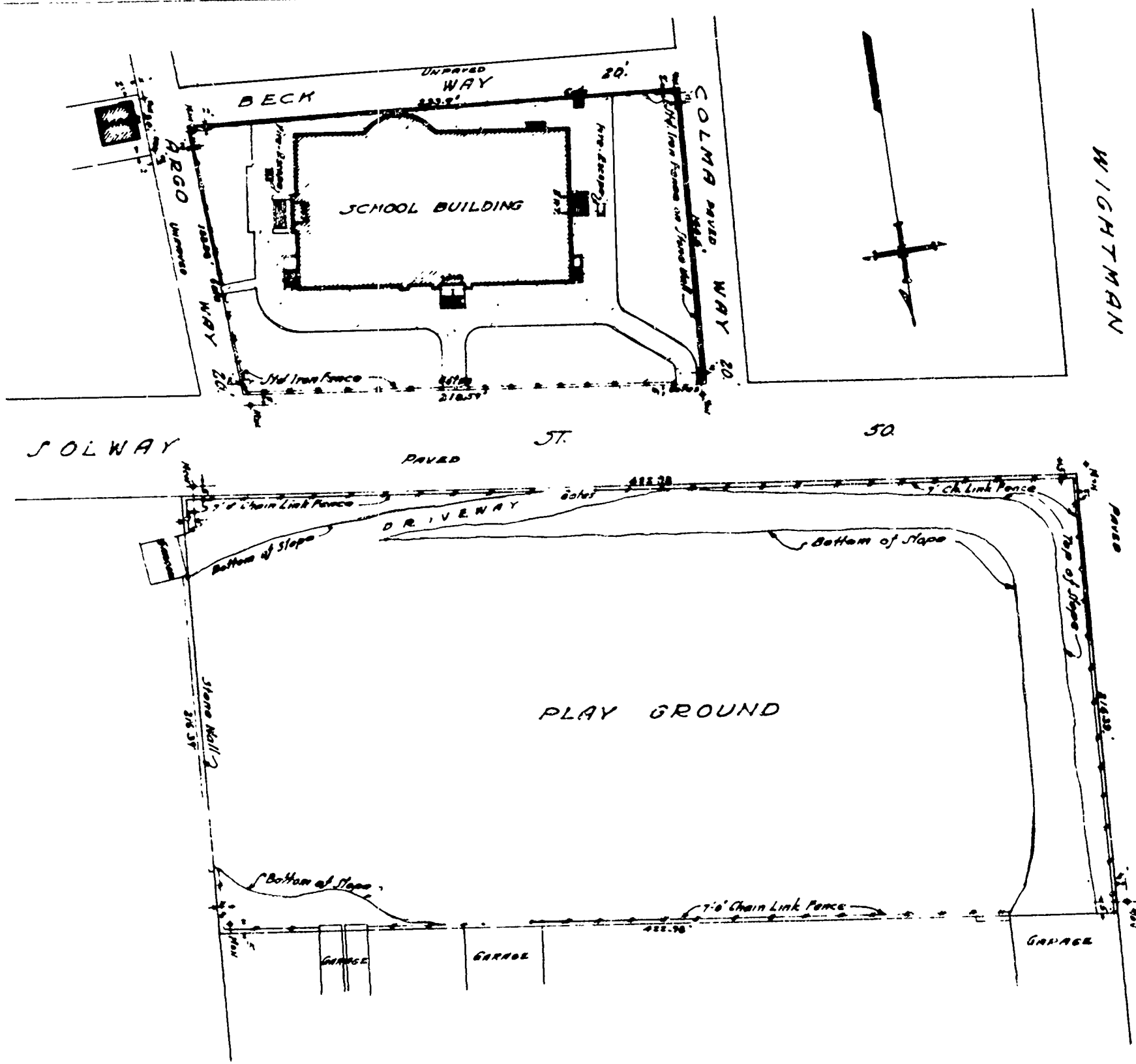
Wightman School exists, in one form or another, in every mature city and community in our nation. The old school building—mellow in years, loved by many, strong of bone—stands in thousands of neighborhoods and serves literally millions of children. But the Wightman Schools of our nation pose a real problem—THEY ARE BECOMING EDUCATIONALLY OBSOLETE. Thinking people having to do with the provision of our nation's educational facilities are becoming greatly concerned about the future of our Wightman Schools. The basic questions are two—should these old buildings be drastically modernized to suit today's and tomorrow's educational programs or should they be torn down and be replaced with new facilities? Difficult questions? Indeed they are!

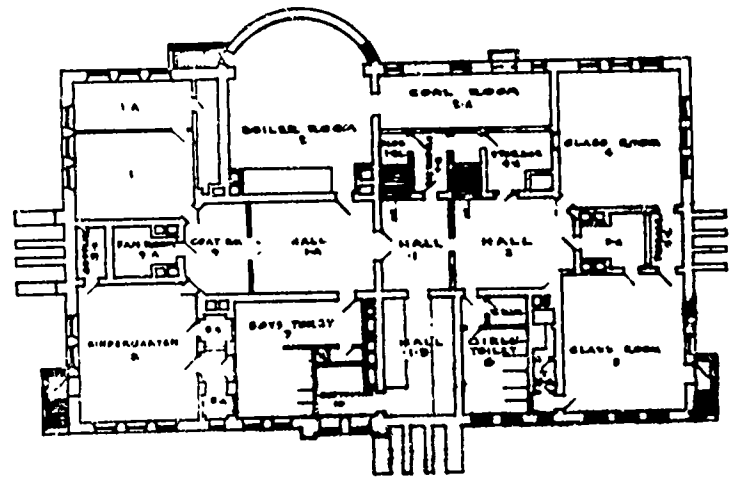
This study was conducted by the Pittsburgh Public Schools and the Department of Architecture at Carnegie Institute of Technology and made possible by funds offered by the Research Council of the Great Cities Program for School Improvement under a grant from the Educational Facilities Laboratories, Inc.

The influence of this study went far beyond the stated purpose of exploring design solutions for one Pittsburgh school. The six visiting architects, all recognized experts in the field of school facility planning, expressed enthusiasm for devoting more of their talents to the problems of school modernization. An interest was developed by a number of students in pursuing a protessional career in school facility planning. Professional practicing architects from all parts of the country were brought together in contact with students and faculty of one of the nation's leading architectural schools. And, certain of the visiting architects expressed active interest in being considered for modernization projects anticipated by the school system.

At the very outset, one important understanding must be reached. It is a matter of the definition of two words—REHABILITATION and MODERNIZATION. Rehabilitation—at least for the purpose of this report—is the process of maintaining a facility in good physical condition. Modernization goes much further. While modernization may well include rehabilitation, it must do a great deal more. In the case of Wightman School, the Pittsburgh Public Schools have established a dynamic and forward-looking elementary education program. Wightman School must become capable of serving such a program. This will require major changes within the existing building and the construction of an addition to substantially increase the floor area.

There is little logic to spending good tax dollars in rehabilitating an old school for more than short term use if it can not become a really good long term EDUCATIONAL FACILITY.





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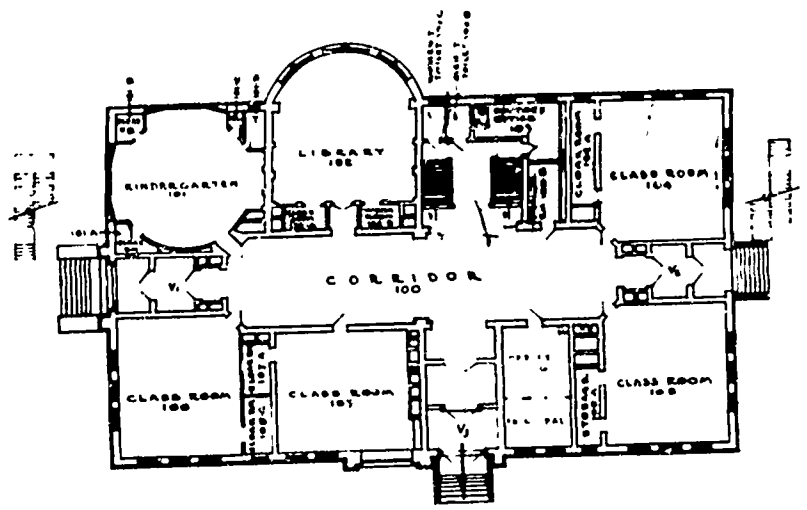

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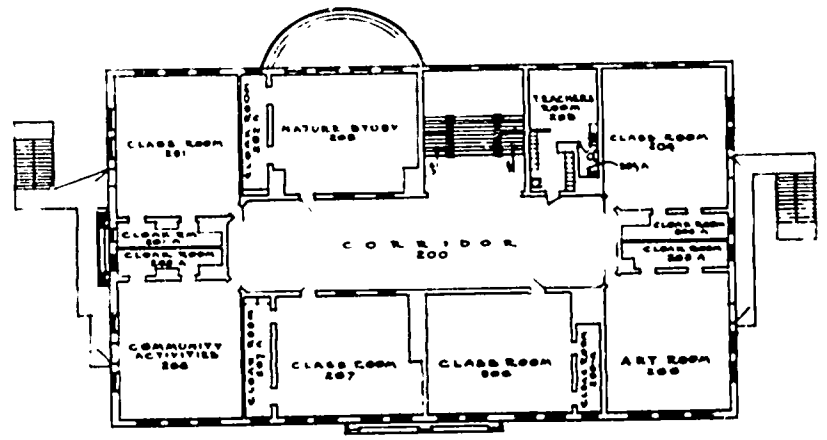
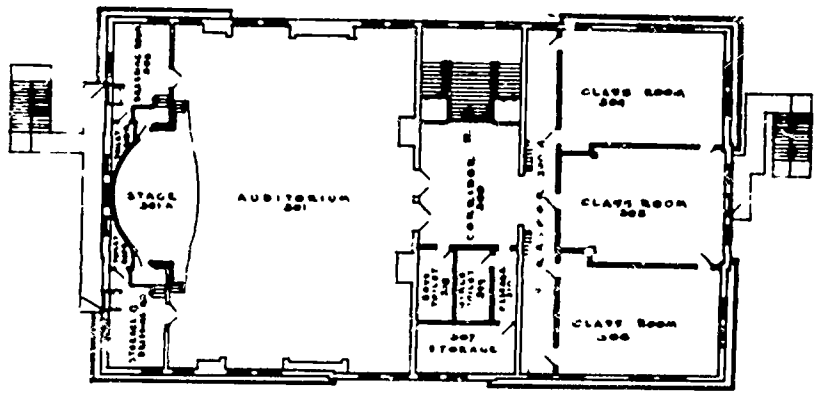


· SECOND · FLOOR · PLAN ·

Form Generators

There are specific influences in the design of any educational facility. In broad terms they are the Site, the Educational Specification, the School District policy and the legal restrictions under which the facility must be constructed. In the case of Wightman School there is a fifth influence—the existing facility. These five influences become the FORM GENERATORS as we seek a new life for Wightman School.



THIRD·FLOOR·PLAN·

The Site

Typical of the urban school, Wightman occupies a far smaller site than its country cousins—the suburban schools. While today's recognized standards call for a minimum site of some 10 acres for a 600 pupil elementary school, Wightman has only three acres. It is obvious that the Wightman site is too small and it is equally obvious that the cost of site acquisition would be considerable. This is the frequent dilemma of the urban school—new or old.

While the site has its limitations (size, a street which divides it, etc.), it also has some elements in its favor. These include a number of handsome trees and a slope which, with careful design, may be used to advantage. Beyond these things, the site is in the heart of the area which it serves—an area of fine, older homes occupied by families interested in a quality education for their children. Thus, while the Wightman site has severe limitations, it is not hopeless. It presents a challenge for the school designer to plan in such a way that the site is used with the greatest possible efficiency.

The Educational Specification

"Ideas, rather than masonry, must be the point of beginning if the design of a school is to effectively accommodate the student and the educational program of the future." Based on that concept, the Pittsburgh Public Schools are conducting a detailed evaluation of their educational programs for today's—and—TOMORROW'S child. It would appear that the master educational specification for elementary schools in Pittsburgh will call for a high degree of individualization of instruction involving programmed learning, restructuring of groups of learning, team teaching, and non-graded programming. Such an educational program calls for a facility of great flexibility—a facility which can be moulded to fit the educational program which it houses.

A building may be viewed as a sort of "assembly of systems." Among these systems are not only the obvious ones such as structural, mechanical and electrical but also systems of partitions, ceilings, floor coverings, chalkboards, tackboards, etc. Each of the building's systems must react to change—sometimes between classes, such as opening and closing operable partitions, and sometimes over the summer recess, such as making major floor plan changes through the relocation of large numbers of demountable partitions. The program also requires a variety of spaces—large, open learning areas, small work spaces for teachers, etc. All of these things will be called out in great detail in a general educational specification which may be applied to all of Pittsburgh's elementary schools. The specific educational specification for Wightman School calls for housing approximately 600 pupils in preschool through grade 5. The number, sizes and relationship of spaces desired in the modernized facility are spelled out in detail. The educational specification calls for a gross building area of over 60,000 square feet—well in excess of the present area of Wightman School.

Policy

While School District policy covers many facets of the design of a school—enrollment limitations and characteristics, transportation, community use of buildings and grounds, maintenance, etc.,—perhaps the most pivotal of all in this case is the policy regarding cost of facility modernization.

For the purposes of this study, the Pittsburgh Public Schools have said that "if the cost of adequate modernization of space within an existing facility must exceed 50% of the cost of replacing the existing building with a new facility, the facility shall not be modernized." This statement would seem to recognize that the ultimate life expectancy of a modernized older facility is likely to be somewhat shorter than a new school. It probably also implies that there are other ways the modernized facility fails somewhat short of the facility such as efficiency of space use and perhaps visual quality.

Another policy which will do much to shape the ultimate design form of Wightman is the fact that the school must remain in use throughout its modernization. Additions may be built during the normal school year with proper protection and coordination but modernization of the existing building must be phased to occur during summer recess.

Legal Restrictions

Zoning ordinances and building codes often present really serious problems to the modernization of older schools. After all—the safety of the occupants of a school cannot be compromised. Old buildings with their open stairways and frequent lack of adequate fire ratings must be carefully studied prior to considering modernization. Often this is the point where it is decided that an old building is simply not well suited to modernization. Often the cost of meeting legal restrictions is not justified by the result.

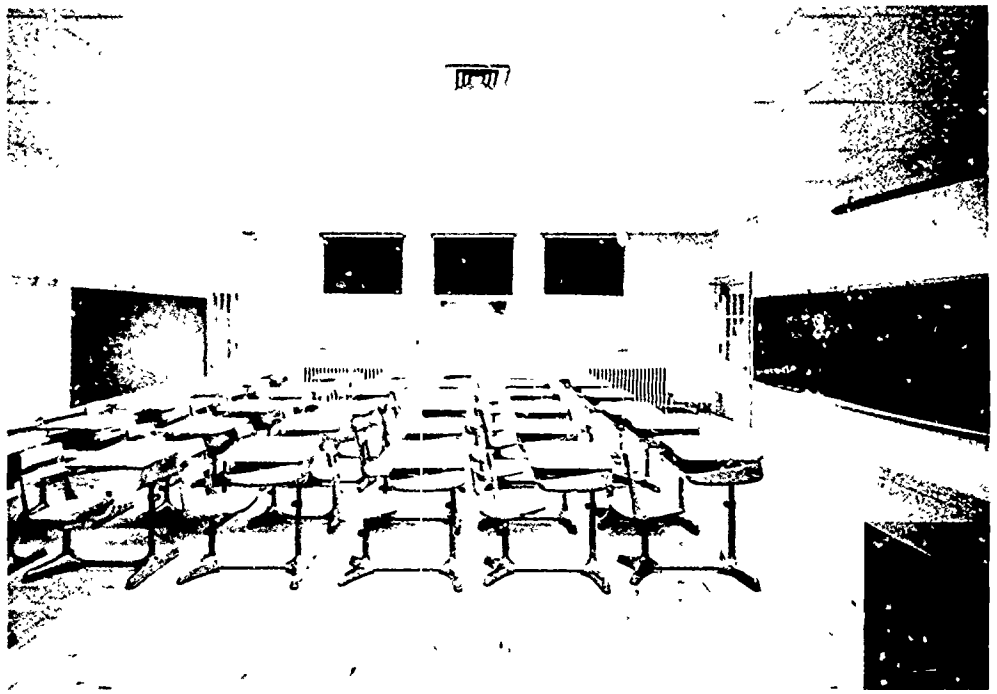
The Existing Facility

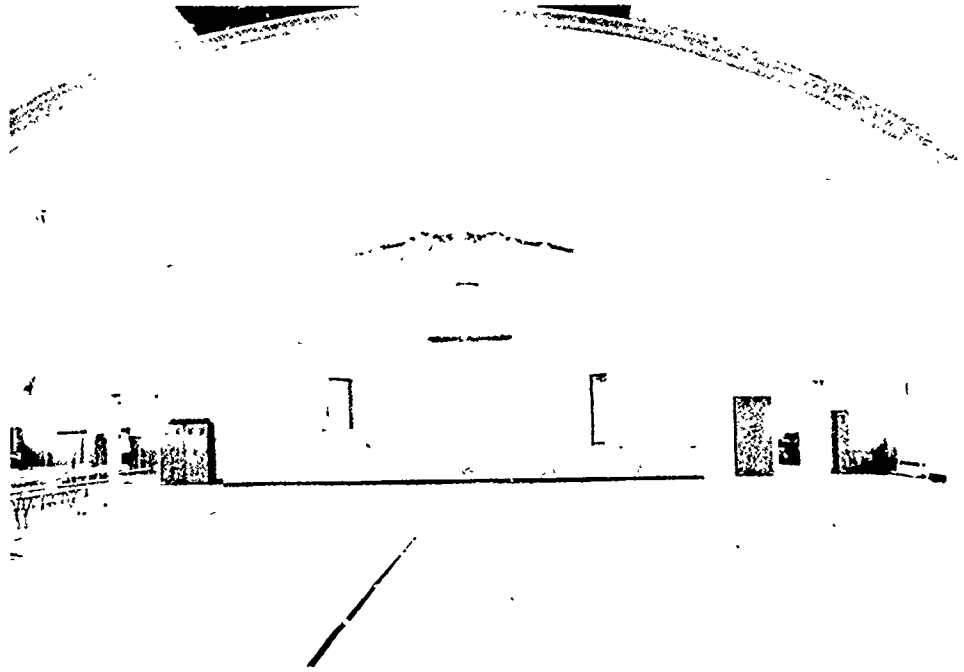
Wightman School was built early in this century. It is hard to imagine that a more typical school of its vintage could have been selected for this study. It has a basement which is partially above grade plus three additional floors. Vertical circulation is accommodated by a great, open stairway—a definite fire hazard—and two outside fire escapes. The outside walls, and many of the interior ones, are load bearing and—if removed—must be replaced by expensive beams and columns. The entire building including heating, plumbing and electrical systems are in good repair. In the last several years considerable amounts of money have been spent to bring Wightman into its present good condition. In spite of all of this, Wightman is still an old building and, in its present state, hardly able to cope with new concepts of educational techniques. Classrooms are rigidly self contained, special use facilities are less adequate than those offered in newer schools. Wightman is simply not ready for the new directions of education.

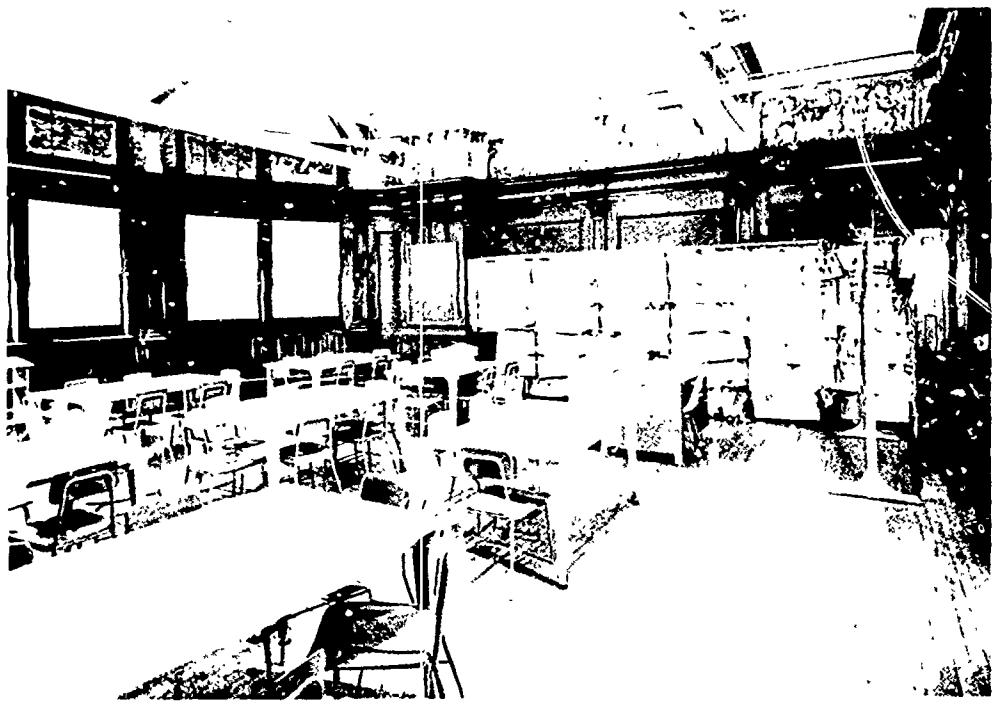
Toward A Solution

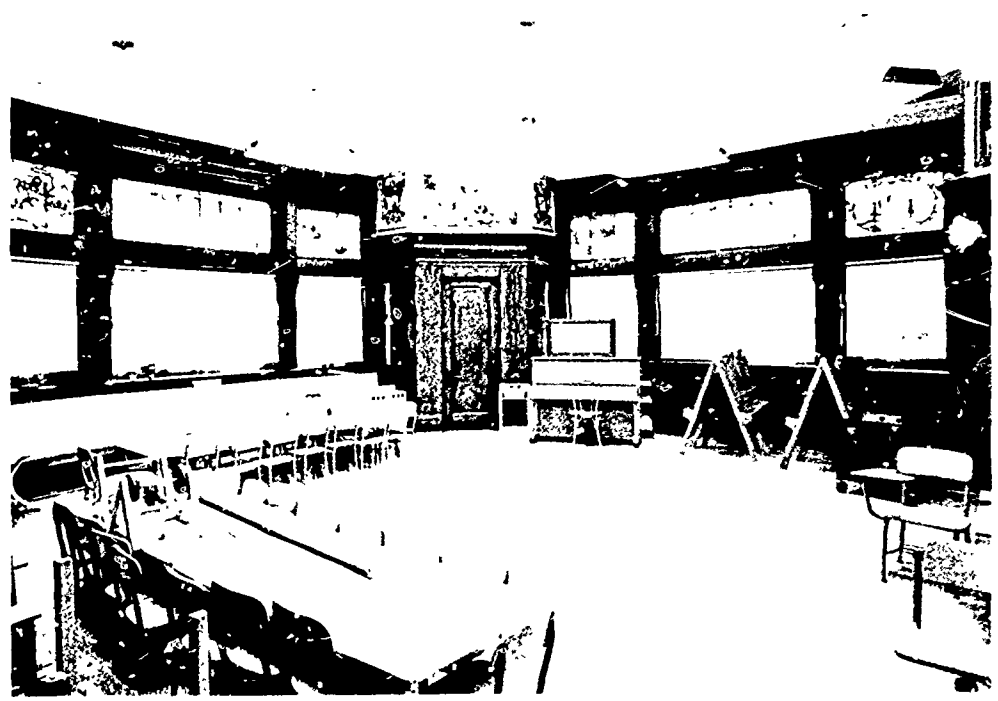
In seeking a solution to the Wightman problem, three architects who are known as specialists in the plan of educational facilities were selected to act as advisors to a group of twenty-six fifth-year architecture students at Carnegie Institute of Technology. The actual designs were developed entirely by the students with counsel from their faculty, the three architects who each made five visits to Pittsburgh and the staff of the Pittsburgh Public Schools. The students conducted their own research programs, visiting elementary schools actually offering forward looking programs and interviewing children, teachers, and educational specialists in many special interest fields.

The solutions contained in this report have been selected as the most representative of the twenty-six designs done by the students. Perhaps use of the word "solution" is a bit premature. Indeed, one may suspect that some of these designs may meet the multitude of requirements for a real "solution" but, in order to be sure, detailed analyses would be required—far beyond the scope of this exercise.









A Brief Analysis

The space analysis is based on the detailed Educational Specification for Wightman. It called for an estimated gross space need of 62,500 square feet for the entire facility. While the existing facility has a gross area of 40,700 square feet, it is doubtful that this existing space will lend itself to full utilization. Arbitrarily, lets reduce the existing area by 20% and say the realistic usable existing area is approximately 36,500. Thus needed space (62,500 square feet) less existing space (32,500 square feet) will call for an addition of some 30,000 square feet. As will be noted, the design solutions include an indoor swimming pool as part of the physical education facilities. This was included in the program for purposes of the study, but the inclusion is not essential to the success of the suggested solutions. If increased community use of the school facilities is indicated, the addition of a swimming pool has further justification. But the ideal space requirements for all areas does exceed the space available which dictated the approach to additions reflected in all of the student design solutions presented on the following pages. Perhaps efficient planning—mixed with a bit of luck—could reduce the area required in the addition. These figures are a point of beginning—sort of rules of thumb.

Design Comments/All Schemes

After a series of reviews of the student designs by the three architects, some general comments must emerge.

Basically, there are so many limitations placed upon the designer of a modernization project such as this, it is doubtful that the results will often equal those obtained from replacement of the existing facility in its entirety. Thus it would seem that the major advantage which may be achieved from modernization, rather than replacement, must be cost. Certainly reduction of expenditure of tax monies for educational facilities is an admirable aim.

Cost Analysis

The cost analysis which follows MUST be taken for what it is—a very preliminary almost arbitrary, analysis.

For purposes of convenience, let us assume that construction of a new elementary school on the Wightman site would cost $20.00 per gross square foot. Then, policy established for this research project (stated earlier) tells us that the cost of modernizing the existing facility may not exceed $10.00 per gross square foot. These two amounts will become our "rules-of-thumb" for this analysis. It must be understood these figures would be adjusted to conform to current cost estimates.

Further, general practice in Pittsburgh will show that the total construction cost of an elementary school may be divided approximately as follows:

General Work	70%
Plumbing Work	8%
Heating and Ventilating	12%
Electrical Work	10%
TOTAL COST	100%

Now, if the existing Wightman School is examined, we would probably find the following (based upon very preliminary analyses conducted by School District Officials):

Utility services to the existing building are adequate and in generally good condition.

The plumbing system is in good repair and should have long life expectancy. If toilet rooms are not required to be relocated by modernization, plumbing costs should not be extensive.

Although the boiler is nearly new, the remainder of the major elements of the heating and ventilating system is much like it was originally. Heating and ventilating systems will require major replacement if considerable floor plan changes are made in the modernization program.

The electrical system in Wightman is nearly new. Present lighting levels are adequately high and adequate circuits are available for convenience outlets. Extensive floor plan change in modernization would require only modification back to the sub-panels.

Thus, based upon the assumption that—if Wightman is to serve the requirements of the educational specification—major floor plan changes will be required as a part of the modernization process and the further assumption that toilet rooms will not be moved, the approximate material in the following table could be applicable:

Division		New Construction
General Work	70% —	$14.00/Sq. Ft.
Plumbing Work	8% —	1.60/Sq. Ft.
Heating & Ventilating	12% —	2.40/Sq. Ft.
Electrical Work	10% —	2.00/Sq. Ft.
Total	100% —	$20.00/Sq. Ft.
		Modernization
General Work	30% —	$ 6.00/Sq. Ft.
Plumbing Work	4% —	.80/Sq. Ft.
Heating & Ventilating	10% —	2.00/Sq. Ft.
Electrical Work	6% —	1.20/Sq. Ft.
Total	50% —	$10.00/Sq. Ft.

The amount of money available for so-called "general work" in the table was determined by first estimating the cost of plumbing, heating, ventilating and electrical work. After deducting these cost items from the available funds ($10.00 per square foot) the remainder may be assigned to general work items such as demolition, structural changes, fireproofing, new systems such as ceilings, partitions, floor coverings, chalkboards, tackboards and such elements as fixed cabinets, etc.

The purpose of this exercise is to prove, if proof is needed, that the methods of modernizing the existing facility must be approached with great care or the budget will be exceeded.

Assuming that, through careful design—the cost of modernization of the existing building is $10.00 per square foot and the cost of the addition is $20.00 per gross square foot, let us estimate the construction cost of the complete modernization of Wightman School.

In earlier sections of this report, we estimated that the minimum **total** gross space required by the educational program is 62,500 square feet. We also estimated that an addition of 30,000 square feet would be a logical minimum and that the existing building could house the remainder of the required total space. Using the factors we have developed in this study, the estimated cost of the Wightman modernization would be as follows:

					Total
Existing Building	40,700 Sq. Ft.	×	$10.00	=	$ 407,000.00
Addition	30,000 Sq. Ft.	×	$20.00	=	600,000.00
	70,700 Sq. Ft.				$1,007,000.00

Cost per pupil — $1,007,000.00/600 pupils = $1,678.33

In comparison, the replacement cost to provide a completely new facility (assuming no purchase of additional site would be required) might be as follows:

62,500 Sq. Ft. × $20.00 = $1,250,000.00

Cost per pupil — $1,250,000.00/600 pupils = $2,083.33

The Point of Decision

Now the point of decision has been reached. The question is clear—"Is the amount of the dollar savings enough to justify accepting the compromises which must be involved in the modernization of an old building? Is this a valid investment of the tax dollar?"

The decision must be made by School District officials. It should not be made based upon this very preliminary study, but rather only after thorough analysis of the existing school and the educational program which must be served.

It is a problem worthy of serious study. The result could well point the way for Pittsburgh and hundreds of others toward the answer to the question of NEW LIFE FOR OLD SCHOOLS.

The selected design solutions which follow are representative of the work of twenty-six fifth-year students participating in the exercise.

F. Lamar Kelsey, F.A.I.A.
Visiting Architect

The Visiting Architects:

F. Lamar Kelsey, F.A.I.A.
Lamar Kelsey & Associates
Colorado Springs, Colorado

Spencer Cone, A.I.A.
Cone and Dornbusch, Architects
Chicago, Illinois

Jack D. Train, A.I.A.
Metz. Train Associates
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For the Department of Architecture
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Paul Schweikher, A.I.A.
Professor and Head
Department of Architecture
College of Fine Arts

Robert H. Burdett
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Assistant Head
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Troy E. West
Assistant Professor of Architecture

For the Pittsburgh Public Schools:
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Superintendent of Schools

Donald D. Dauwalder
Associate Superintendent of Business and
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Merwin L. Himmler
Associate Superintendent for
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Director, Facilities Division

Allan E. Albig
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J. Robert Brooks
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Educational Specification Consultants:
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Donald Davis , Associate Director

Donn Wadley
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For the Research Council:
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CM

DH

RC

RJ

WS

JW

LG

RK

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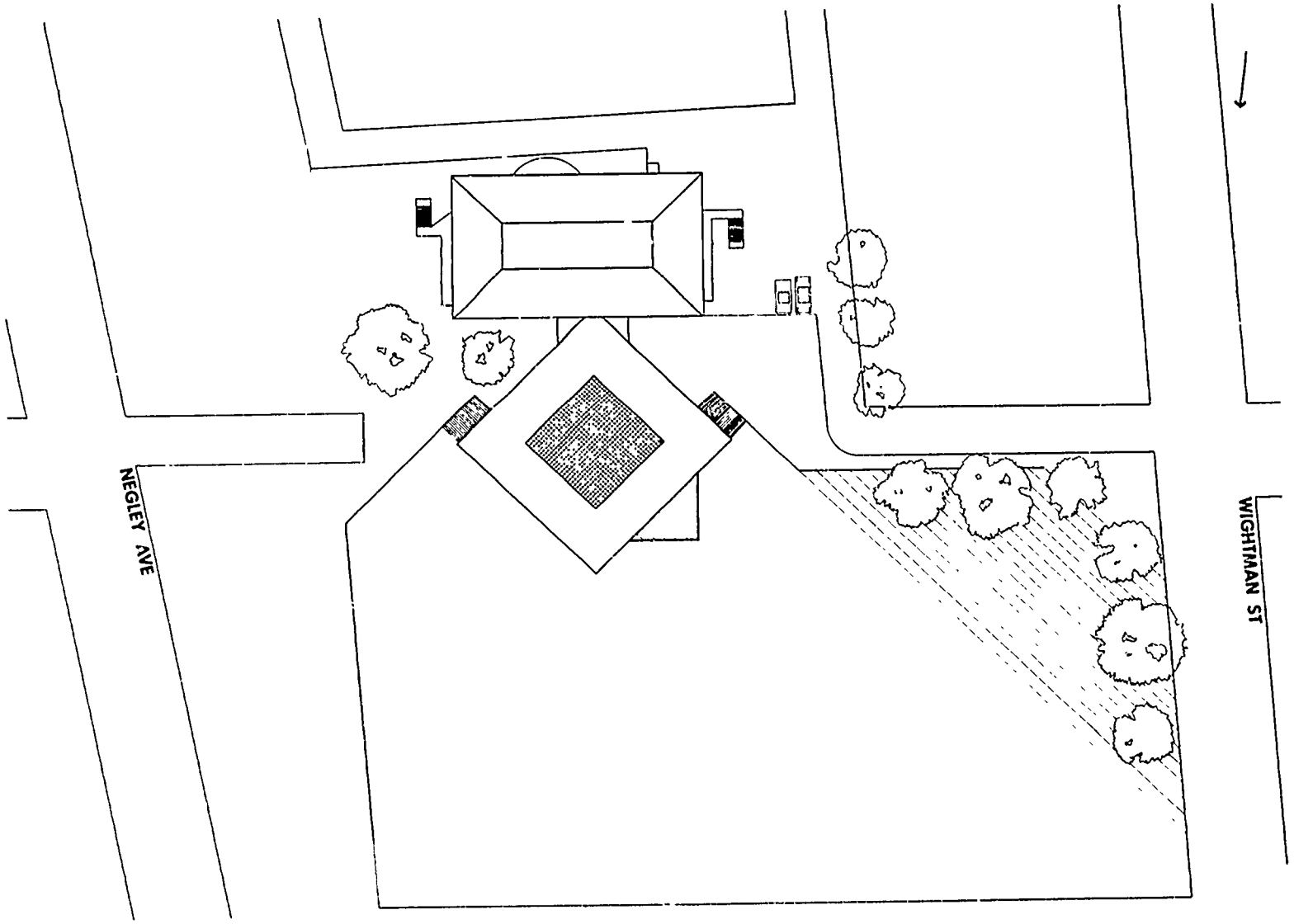
JK

CM



PLAN 1

Claude Menders

The solution to the Wightman School design problem was influenced by two practical considerations: economic efficiency and scheduling of the construction work with a minimum of interference to the regular class schedules.

This led to a problematic solution with these considerations:

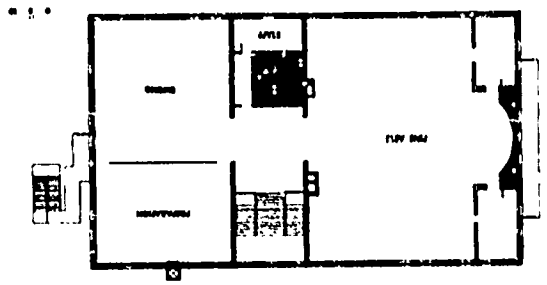
Construction of a classroom addition.

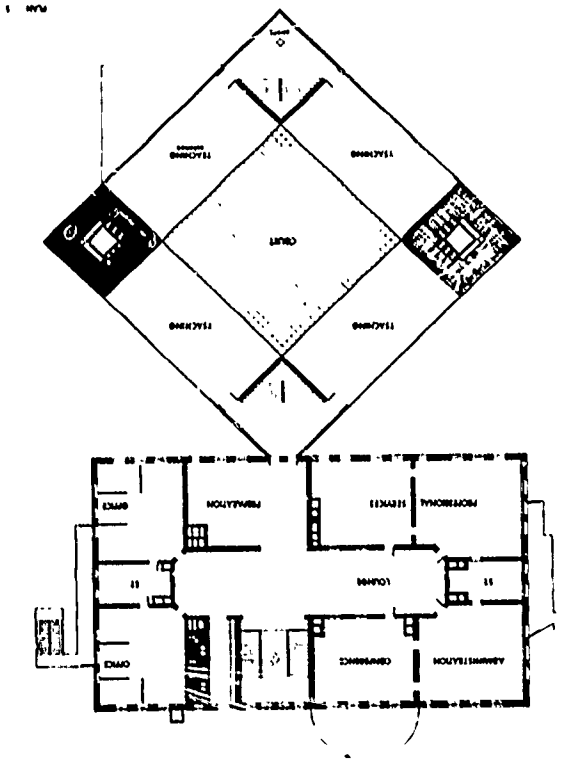
Remodeling of the existing school to house specialized functions including administration, guidance, health, cafeteria, fine arts and kindergarten.

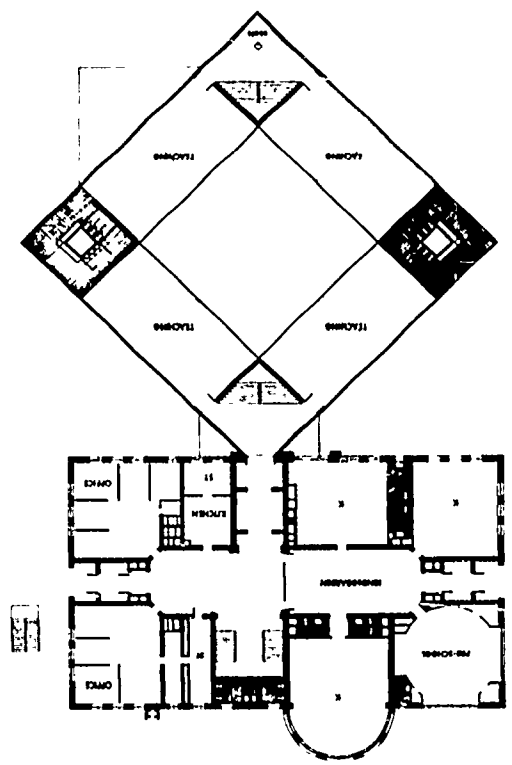
Architecturally this solution calls for three levels of teaching spaces surrounding the Resource Materials Center and an exterior roof court. The physical education facilities are on the lower level with direct access to the outside play area. The circulation, mechanical and toilet facilities occur at corners.

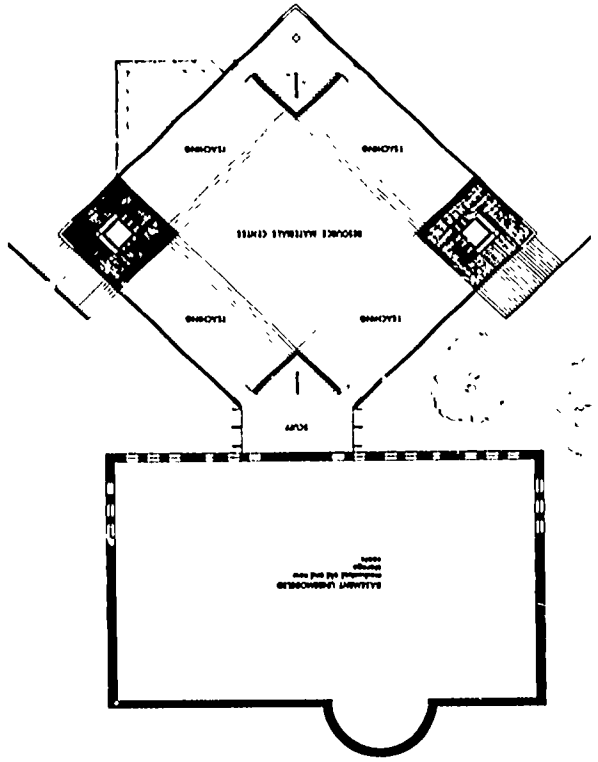
For purposes of this study, these area computations were used:

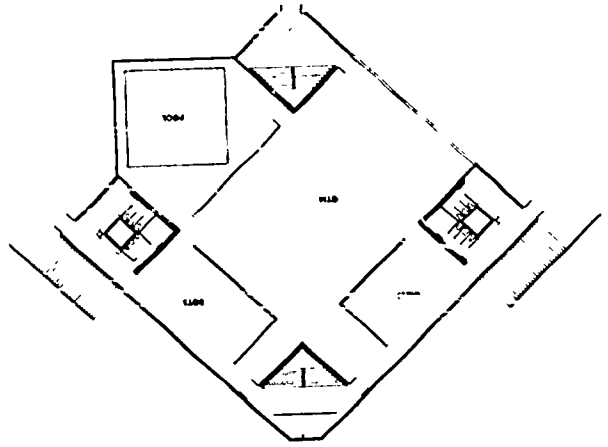
Existing	21,800 sq. ft. (80% of three levels, basement economically unusable)
Addition	36,200 sq. ft.
	58,000 sq. ft.

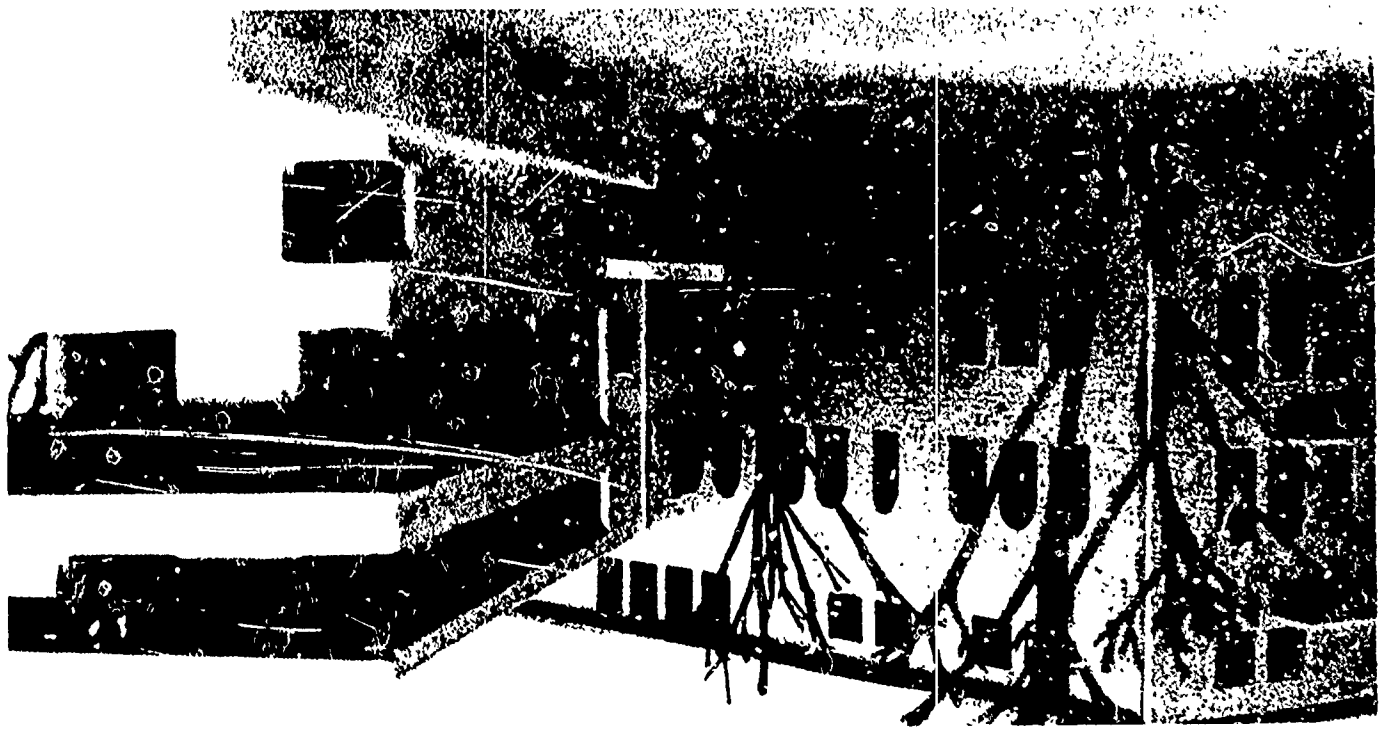


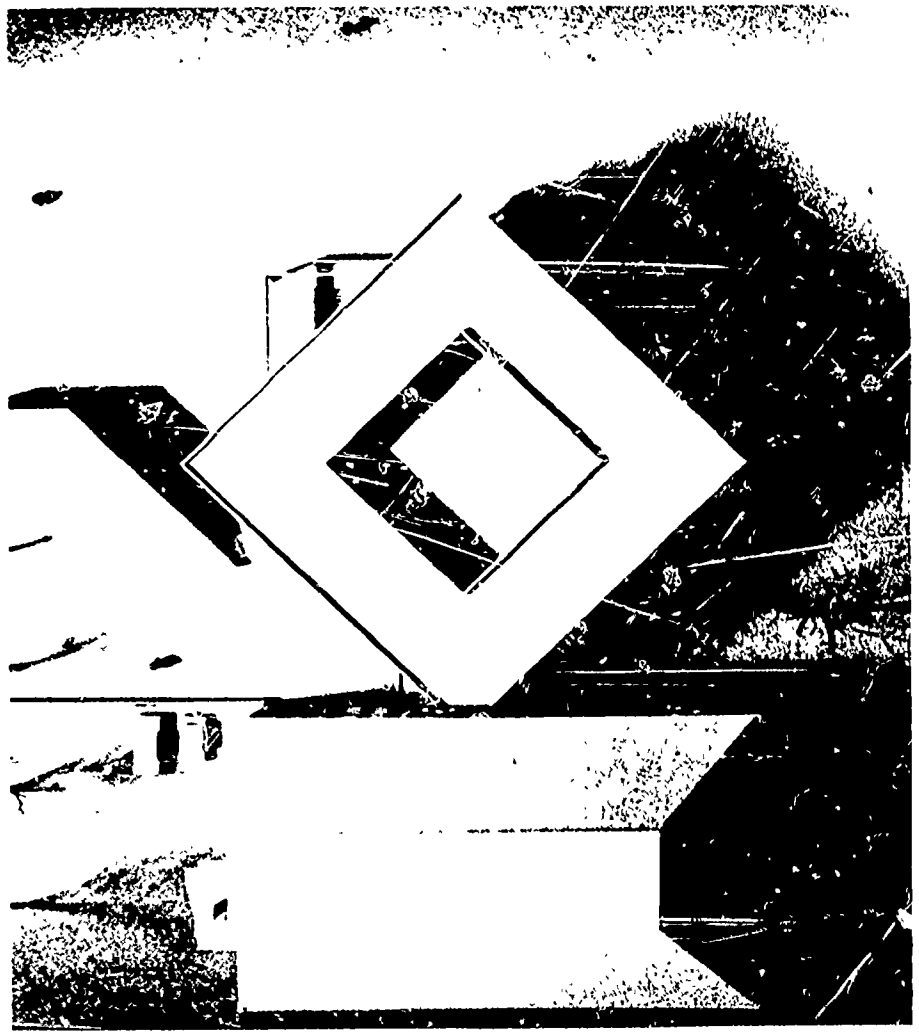


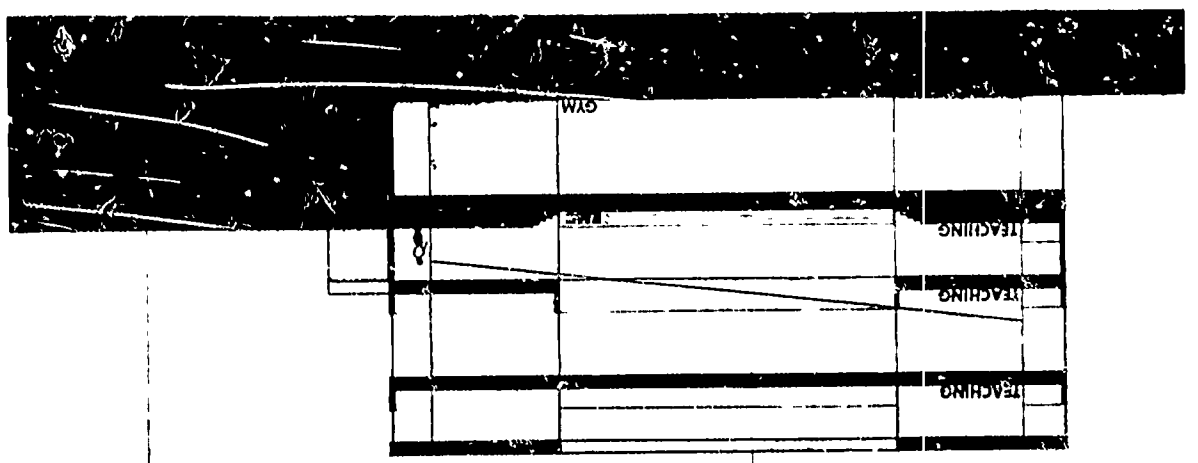








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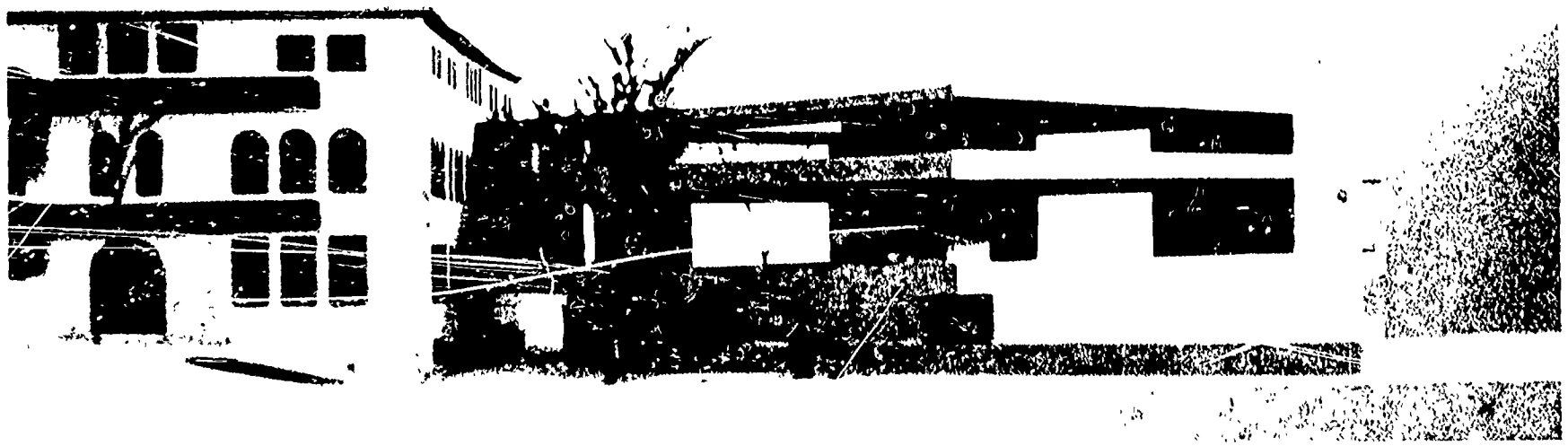

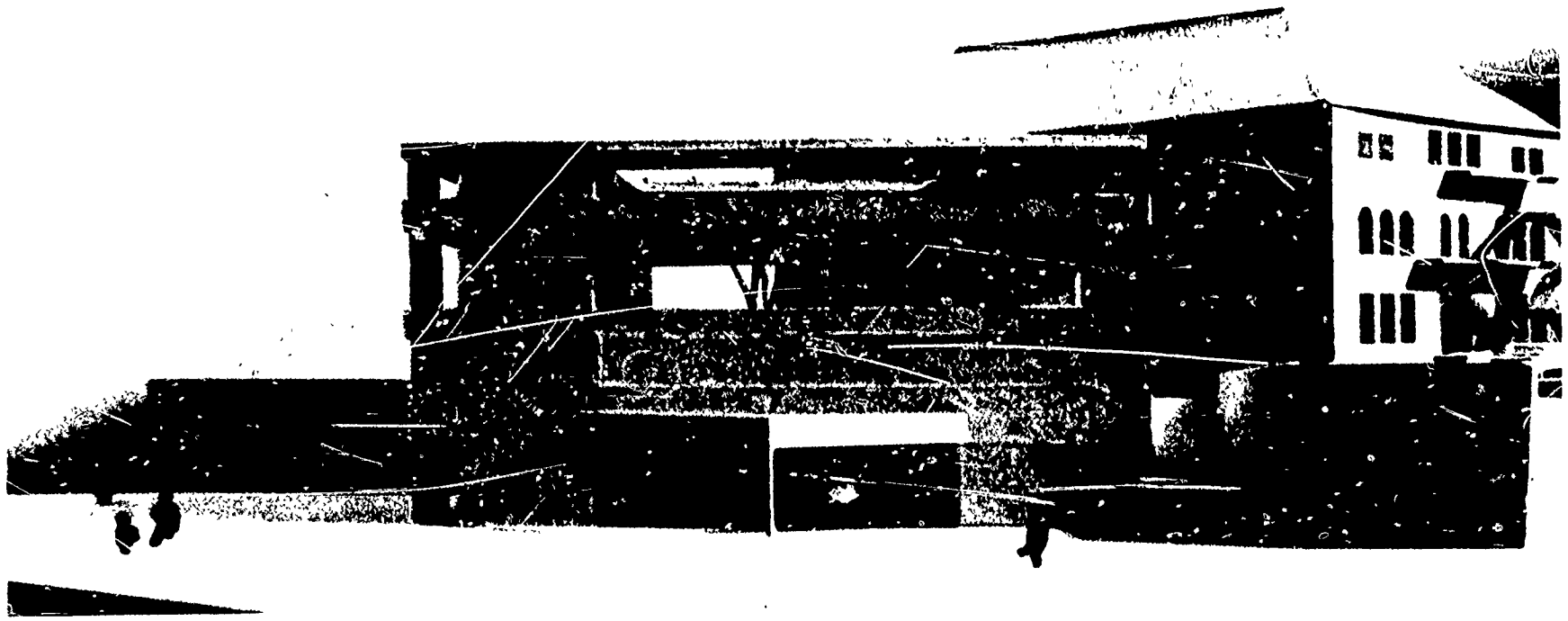

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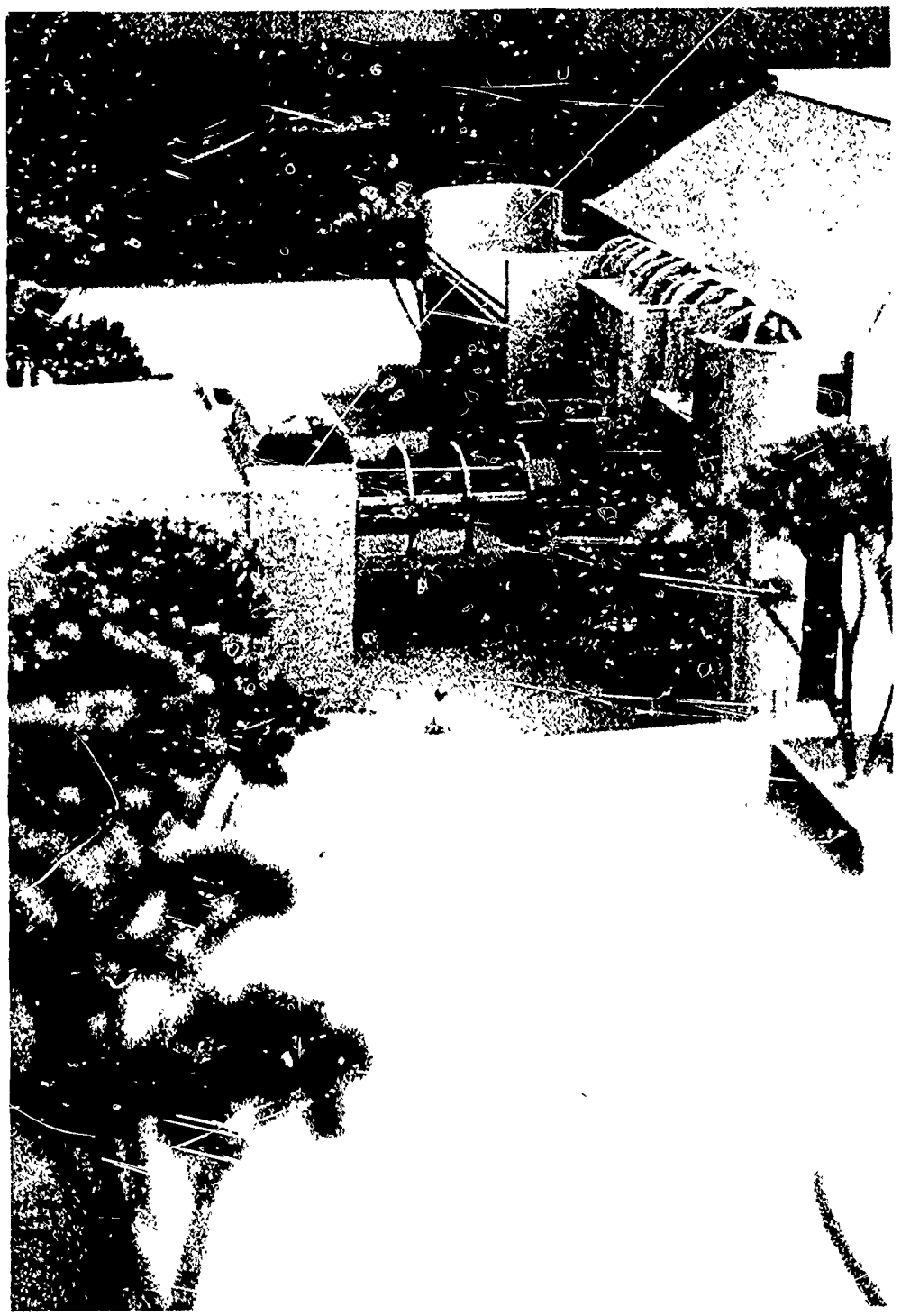
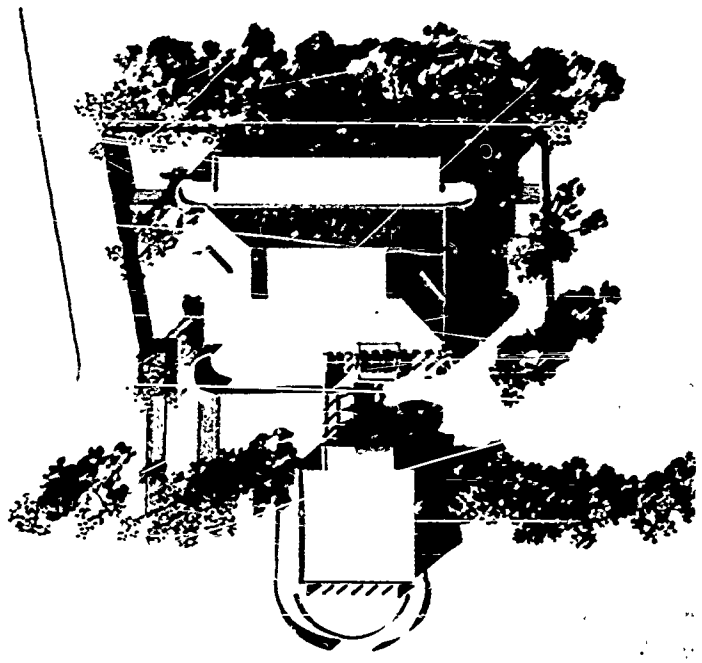
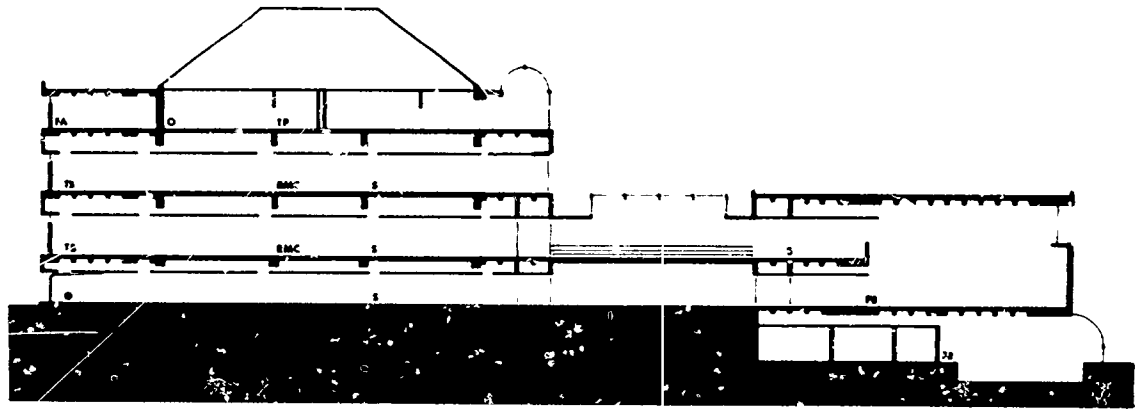


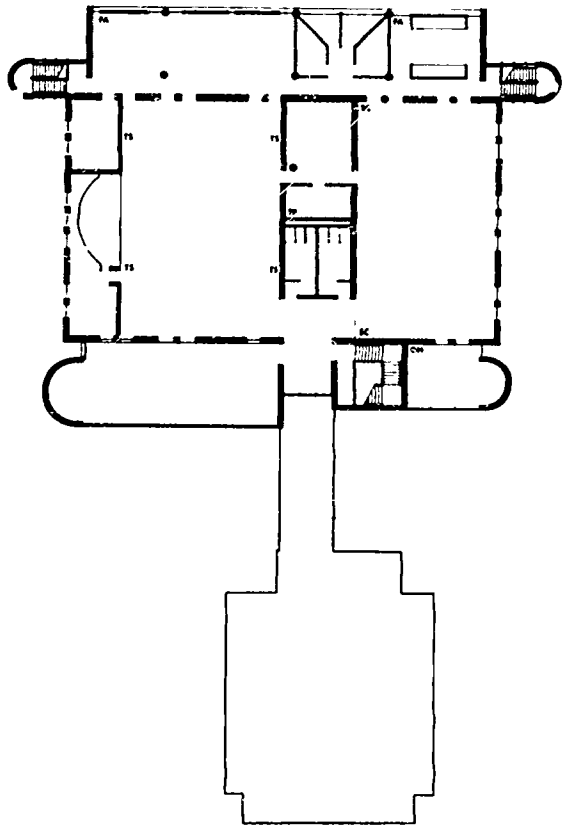
Administrative, medical and cafeteria functions occupy the first floor (the present basement of Wightman School) leaving the upper floors entirely free for teaching functions. Physical education facilities are provided for in a separate, but connected, structure with direct access to the playing fields.

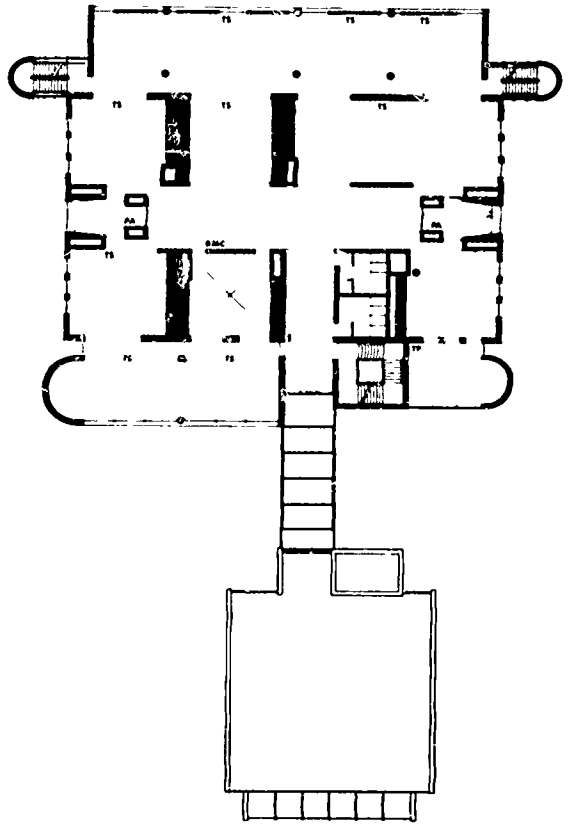
Thus the facilities of Wightman School are readily adapted to the expanded team teaching function with a minimum of structural and mechanical alteration to the existing structure.

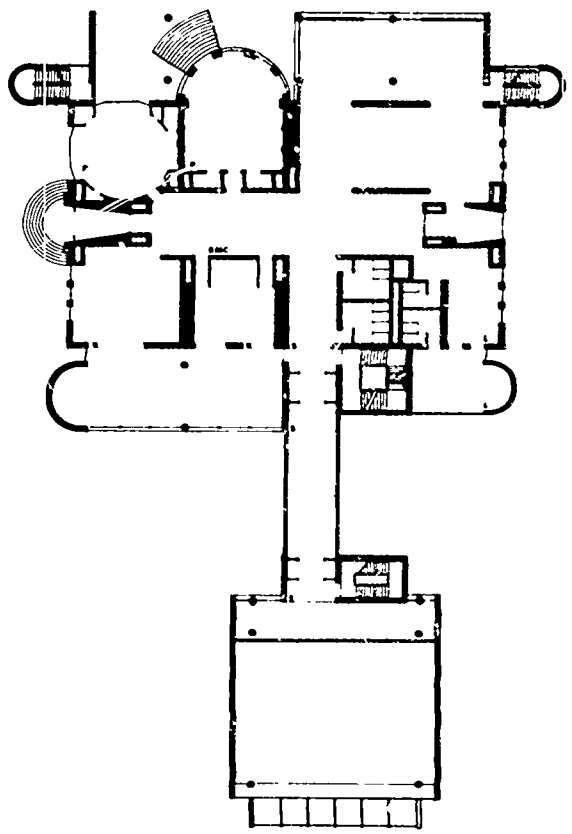
Expansion of the existing school facility is achieved by building additions to the north and south of the present school. Interior walls are retained as room dividers, but no attempt is made to totally enclose the teaching areas. Each teaching area flows into the next to provide for flexibility. The resource materials center occupies the central location on all teaching floors to allow easy access from and to all teaching stations. Preparation areas are also centralized.











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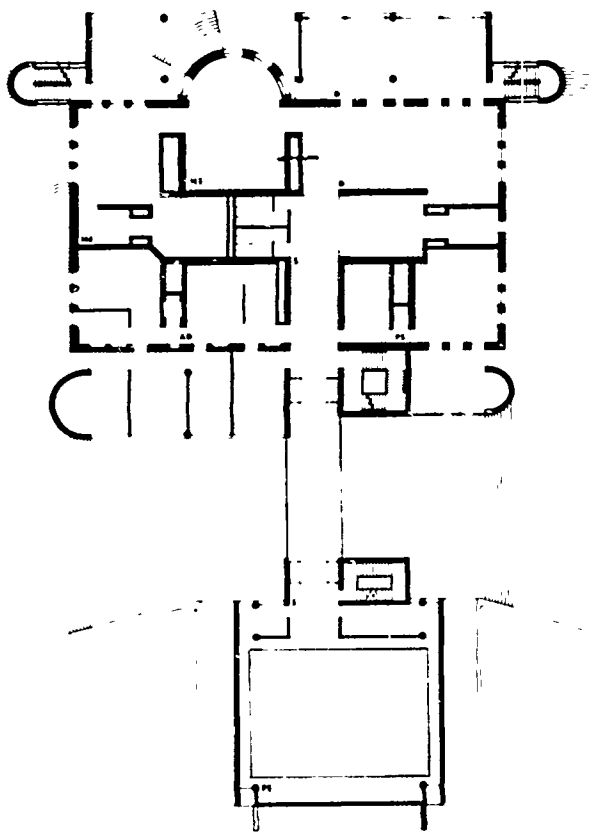
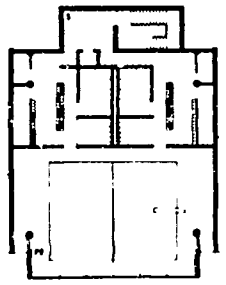


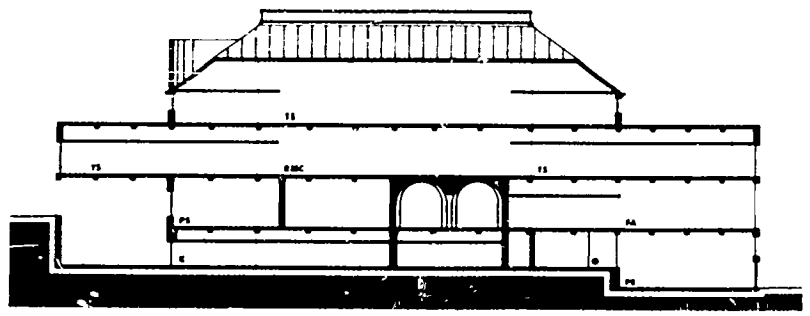


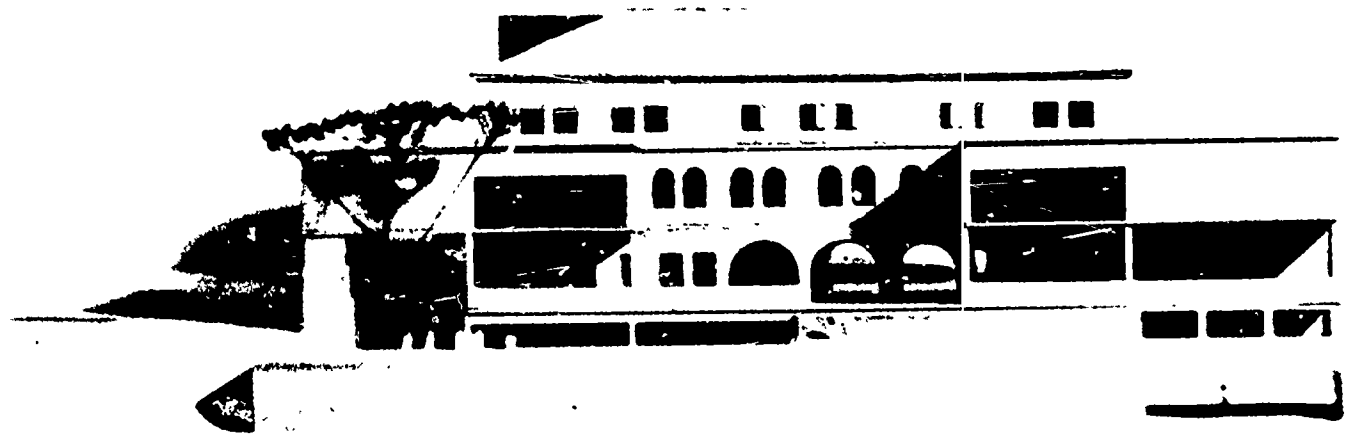
The basic concept behind this solution was to find a suggested answer not only for Wightman School, but others of its type.

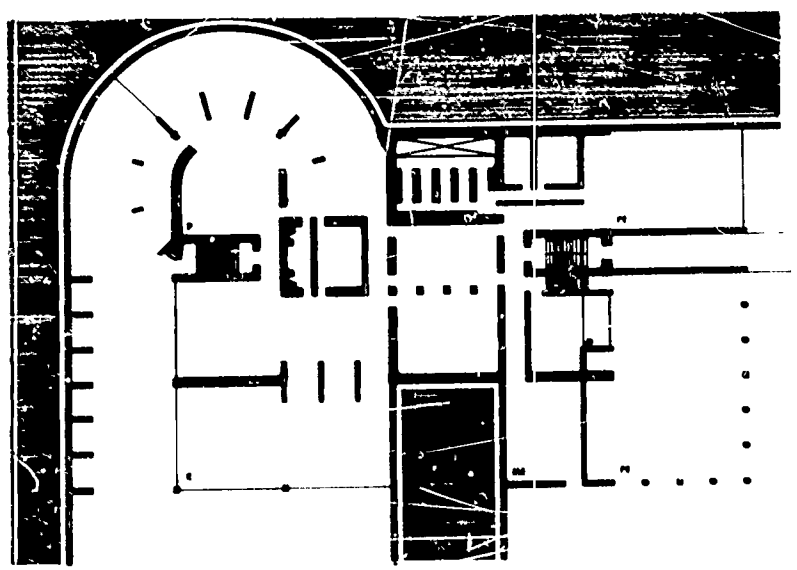
The solution was formulated by examining the structure on the existing school and determining which bearing walls were required to pick up the structural steel of the floor above. Outside walls can be removed. This, as shown in the diagram, opens up the outside walls of the structure for expansion. New additions were designed as separate units which, when plugged into the existing building, would work under the team teaching program.

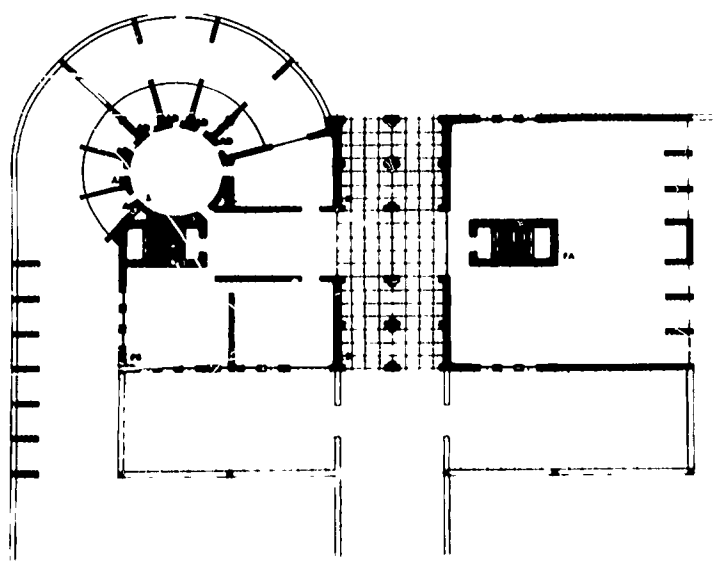
The spaces in the "plug-in" units are designed to flow freely into the spaces of the existing building. It is believed this type of a solution is applicable not only to the Wightman School, but to other schools of its type.

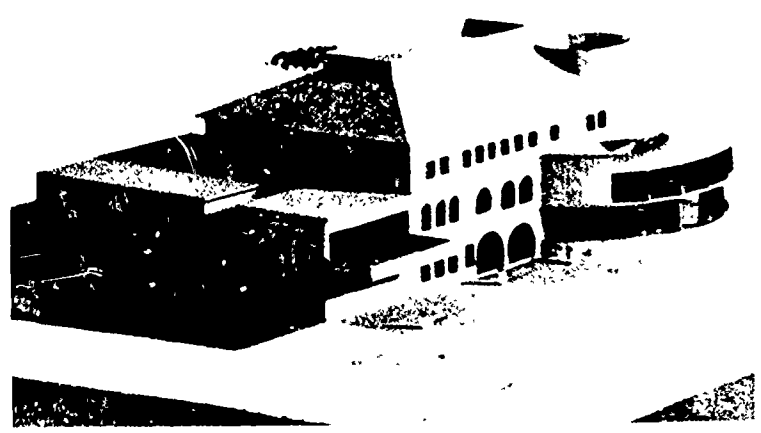
WS

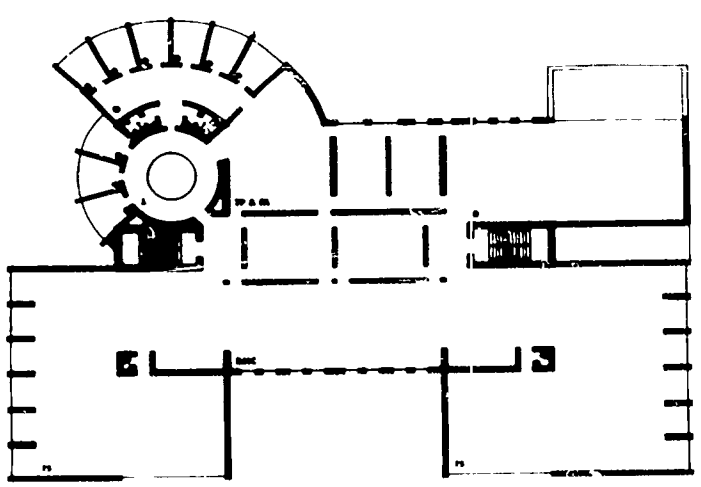


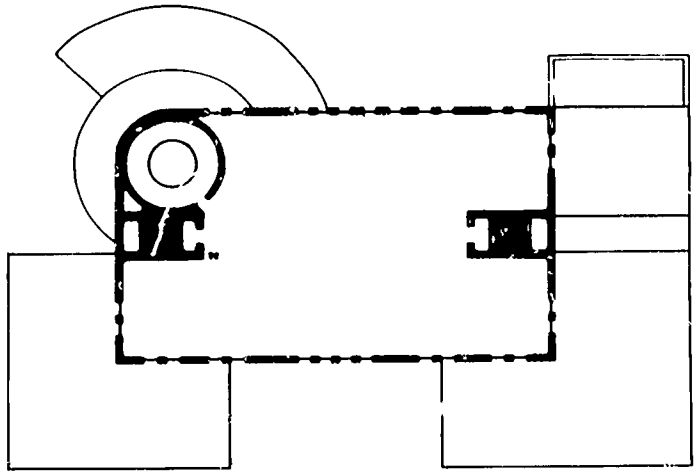


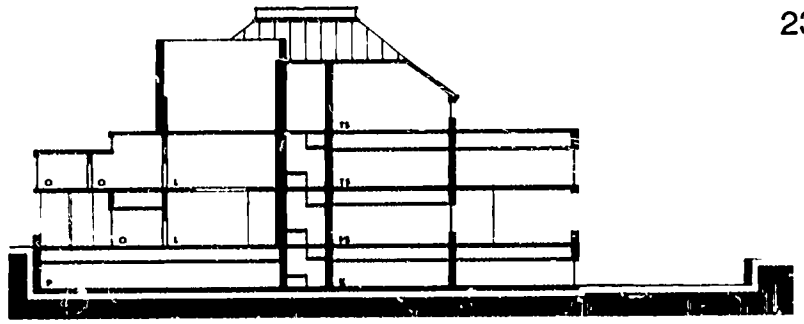


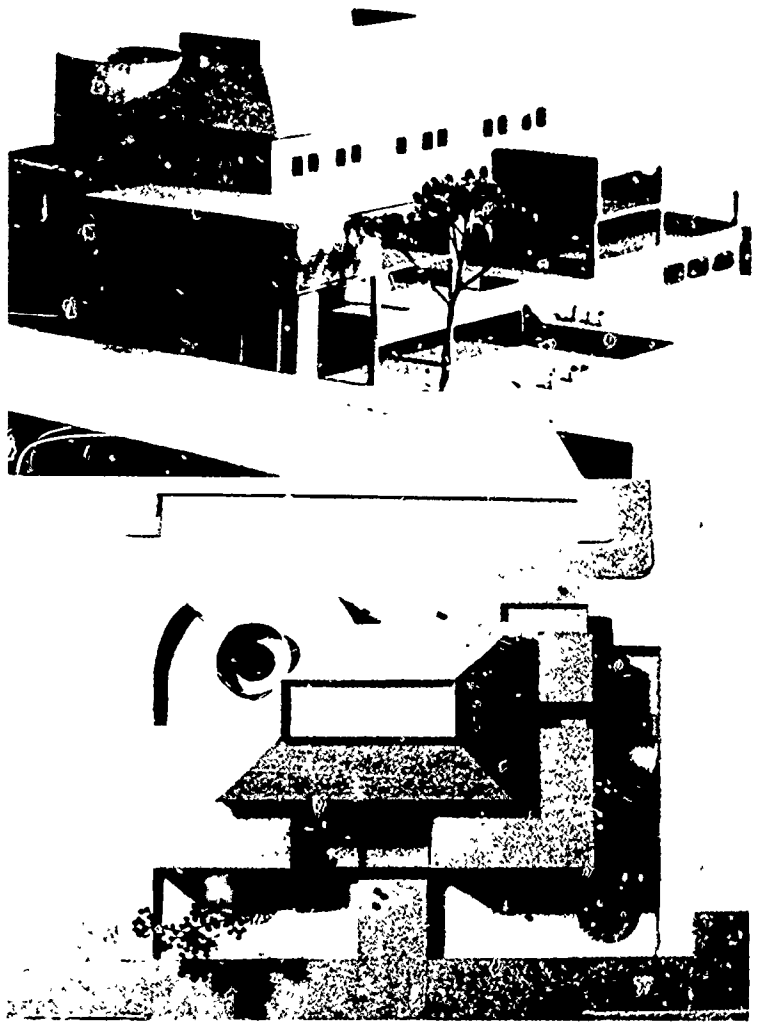












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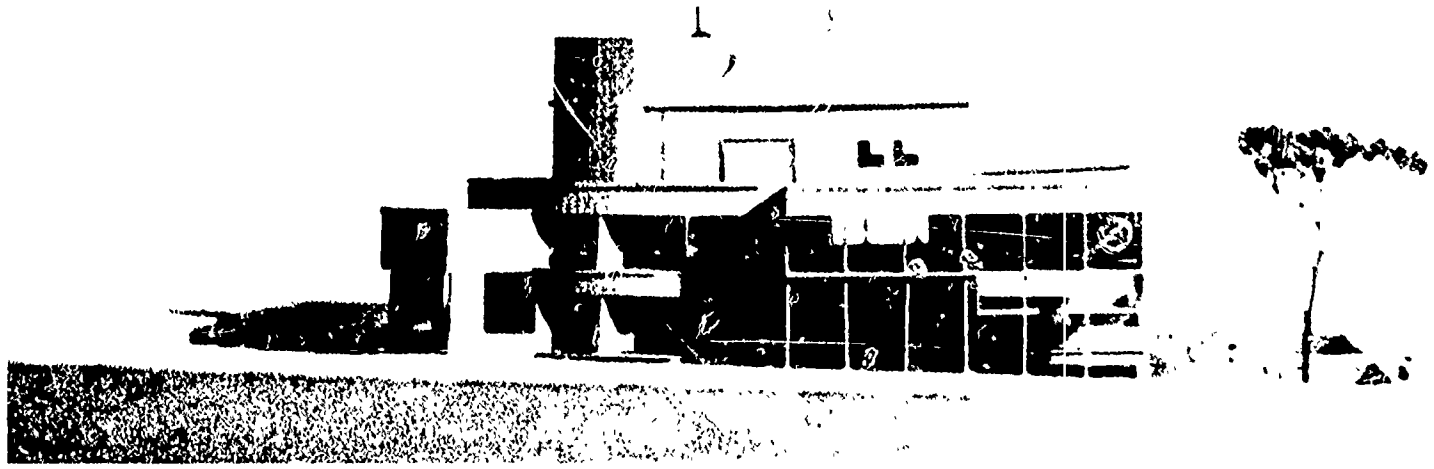
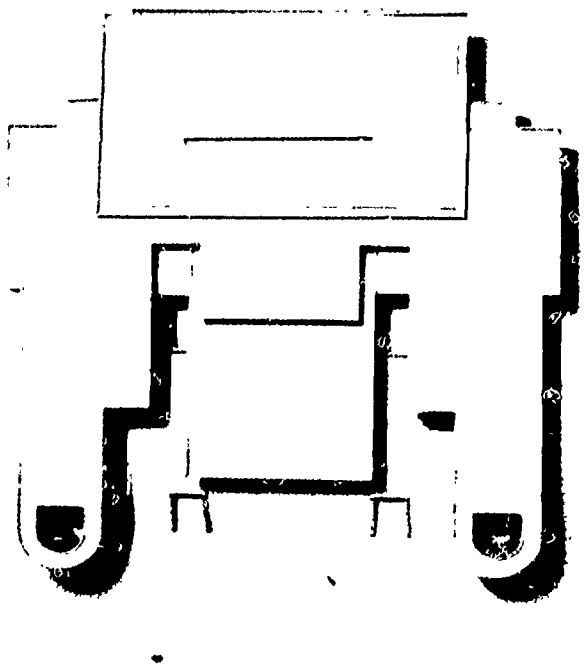


LG

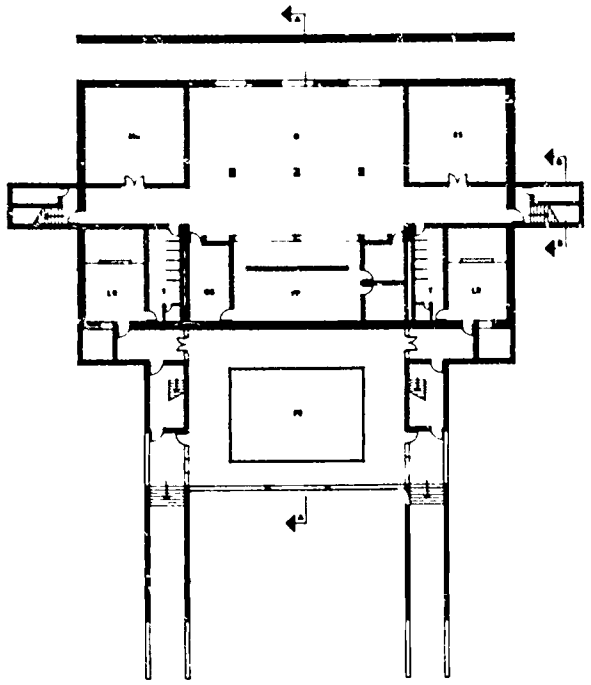


There were two primary objectives influencing this solution to the Wightman School design exercise. First, a maximum usage of the existing building, and secondly, adequate planning to permit the facility to adapt to house any future educational program.

To satisfy the first objective, the entire building was reapportioned to make the most of the given space. This was achieved by making a major structural adjustment within the old building eliminating two bearing walls and replacing them with a post and beam system which is economically justified by the space gained.

The second criteria for design was the function of the team teaching space and its future role in the educational program. The present design gives this program the flexibility it requires. However, the space was designed so that the addition of a few partitions could convert the school back to a conventional classroom arrangement, or by other arrangements, satisfy a variety of teaching approaches. These partitions can be erected between the office cubicles and the exterior walls. The total addition of the building was placed to eliminate, as much as possible, the existing facade which was no longer valid after the rearrangement of the interior spaces. It is also possible to completely eliminate the cumbersome elevations by totally enveloping the existing building.

However, this would be determined by each school, its program, and the amount of site available. This is a proposed answer for this particular school, and it is felt the thought process is valid for updating any old school.



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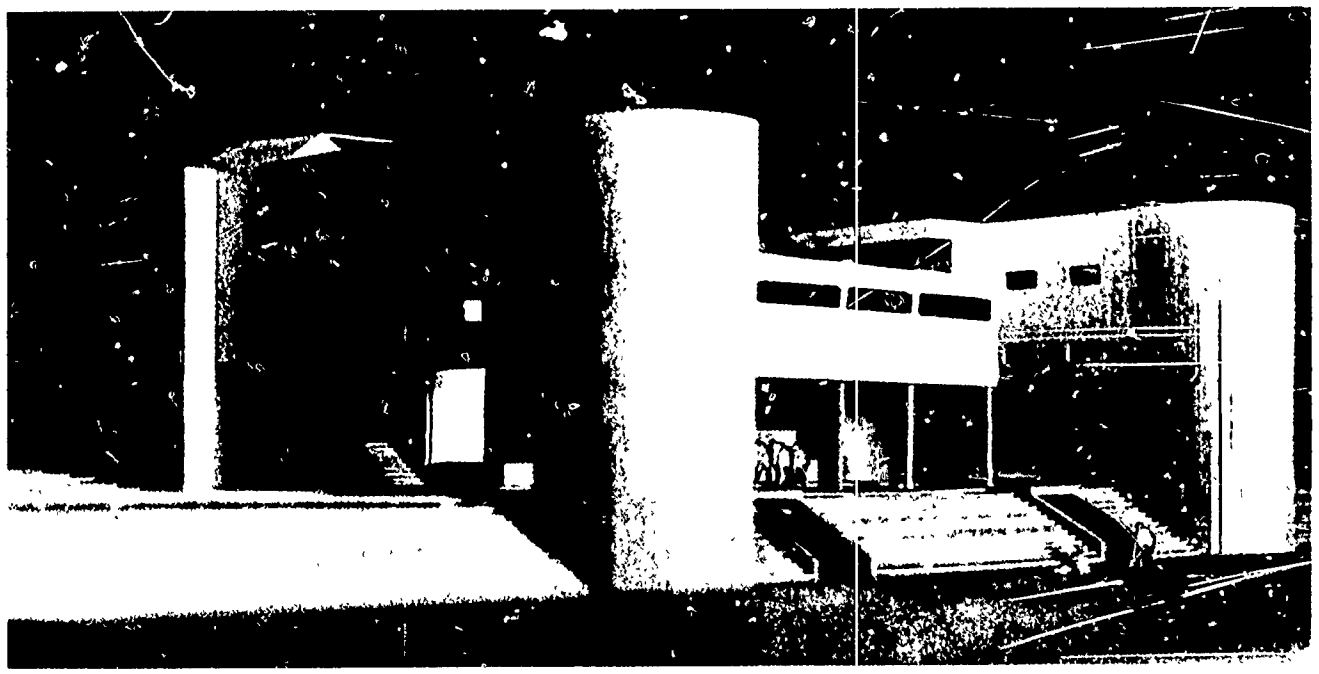

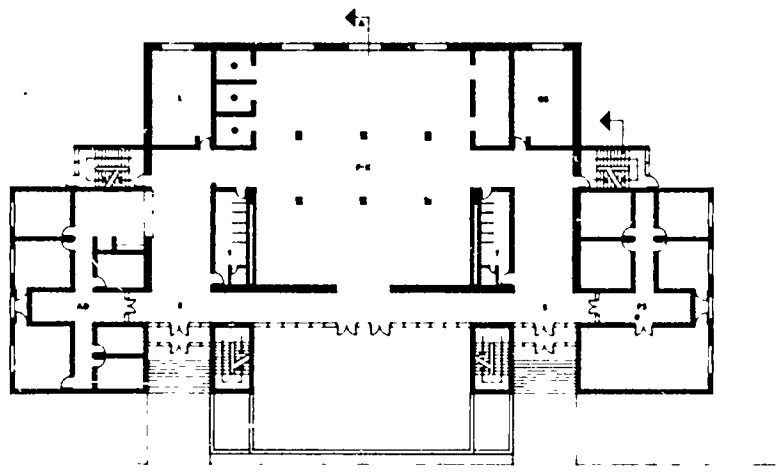

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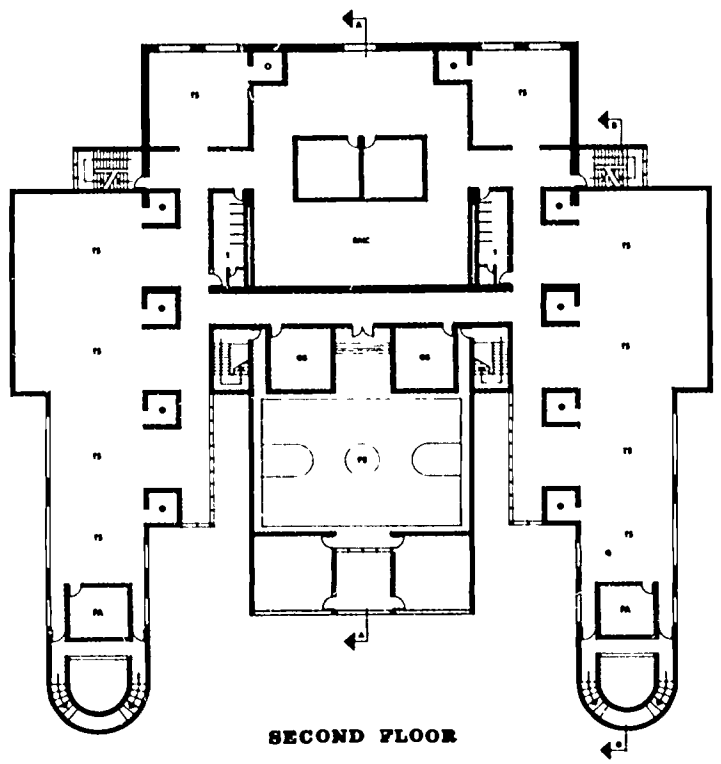

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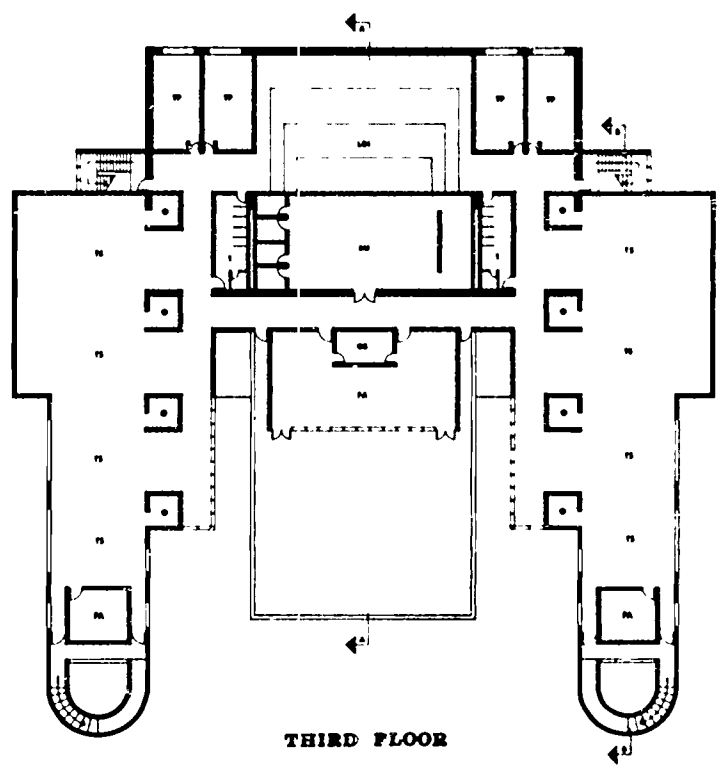

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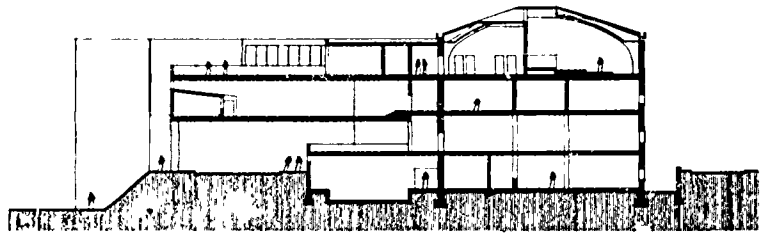
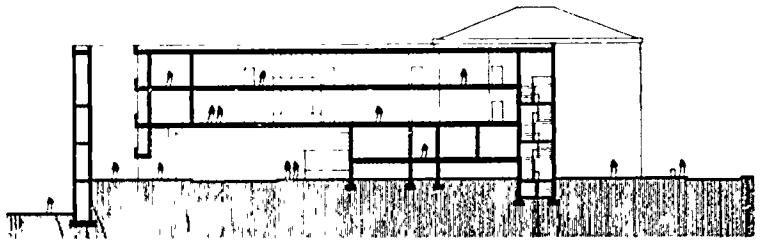


SECTION A·A



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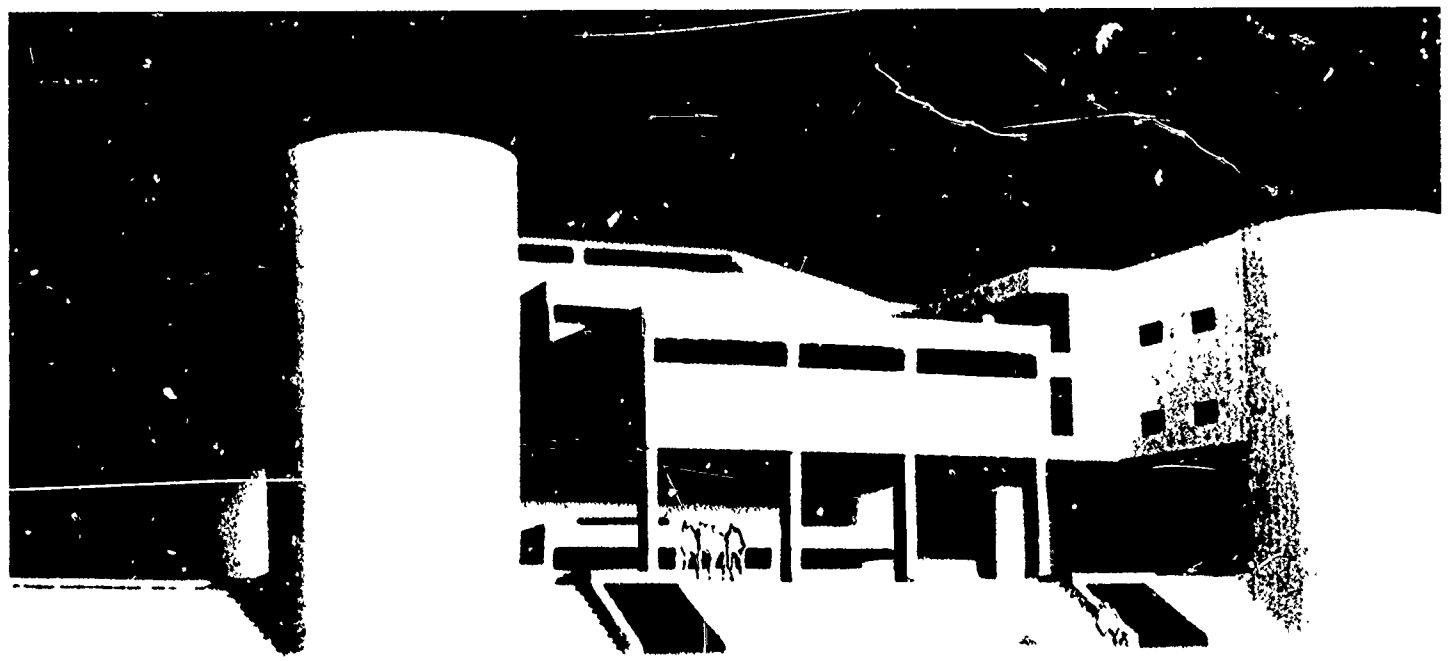
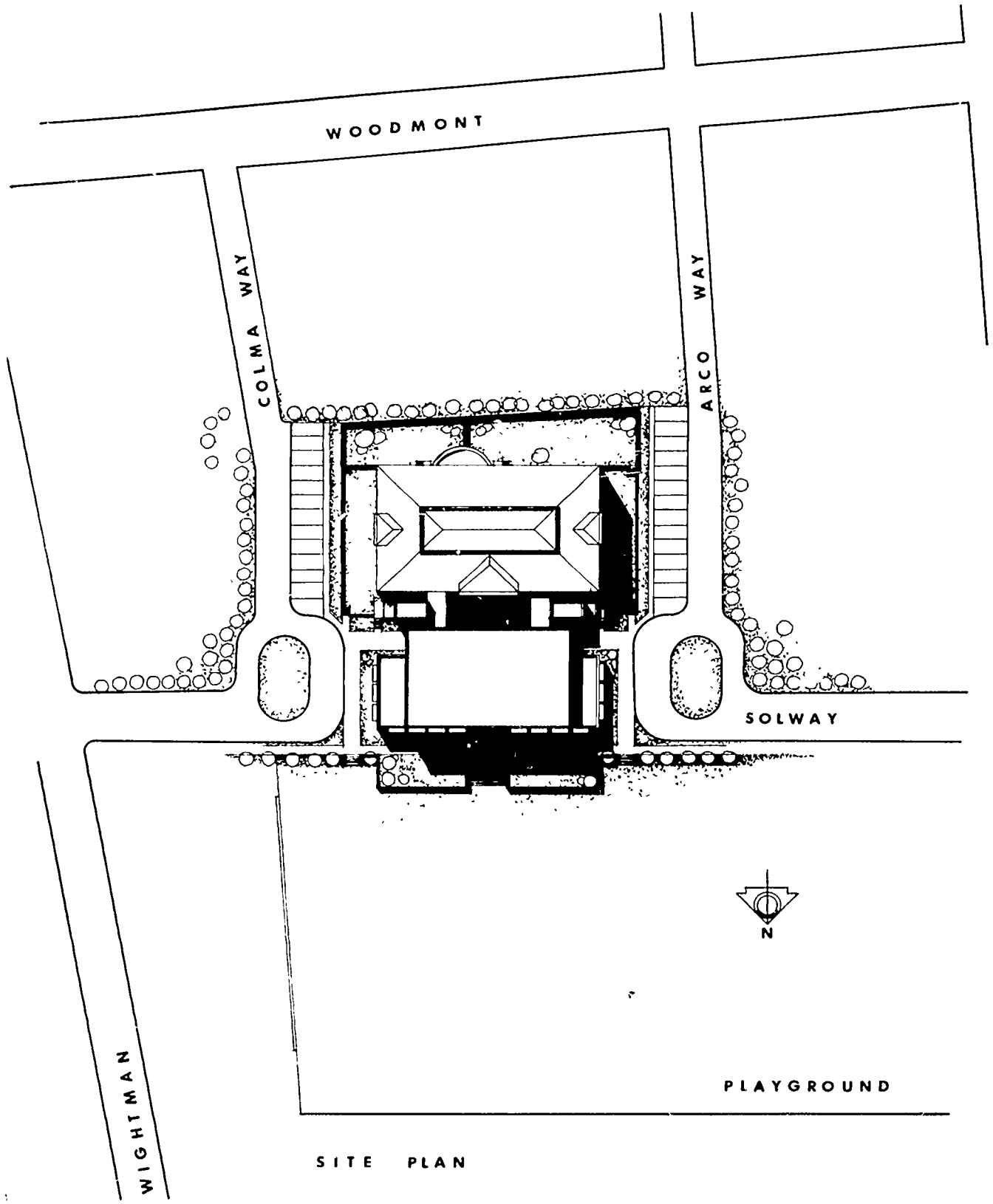




SITE PLAN

Rhett H. Jones

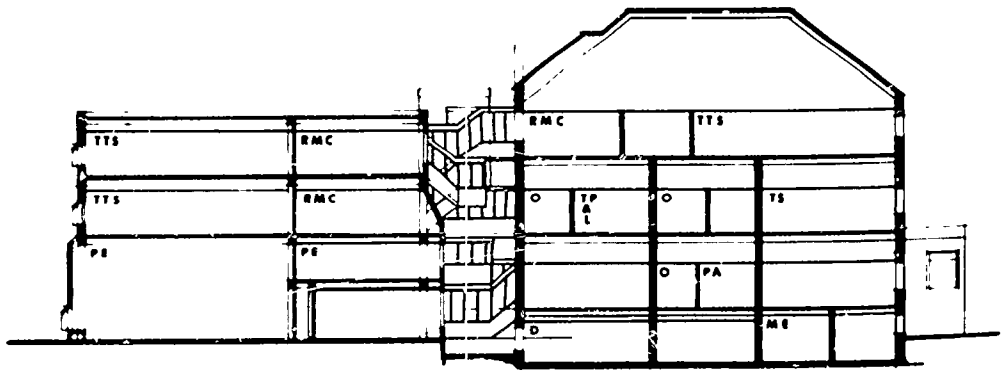
Basic to the solving of the Wightman School design problem is an understanding that (1) the school was originally planned for a traditional educational program, and (2) it cannot house the proposed educational program without major additions and interior changes to the existing building.

The solution to this conflict was effected by allowing the traditional attitude to be expressed externally in terms of form and structure. The internal environment and circulation reflect the mobile atmosphere to twentieth century education as called for in the educational program.

RJ

The existing building and additions are connected by walkways to permit construction of the addition without interference with the regular school sessions, thus allowing the final connections of the walkways and the existing building to be accomplished during three summer months.

The addition, as designed, must be attached to the front of the existing building because of the prevailing site conditions. This limitation justified the closing of Solway Street which was a pedestrian barrier between the school and the playground.



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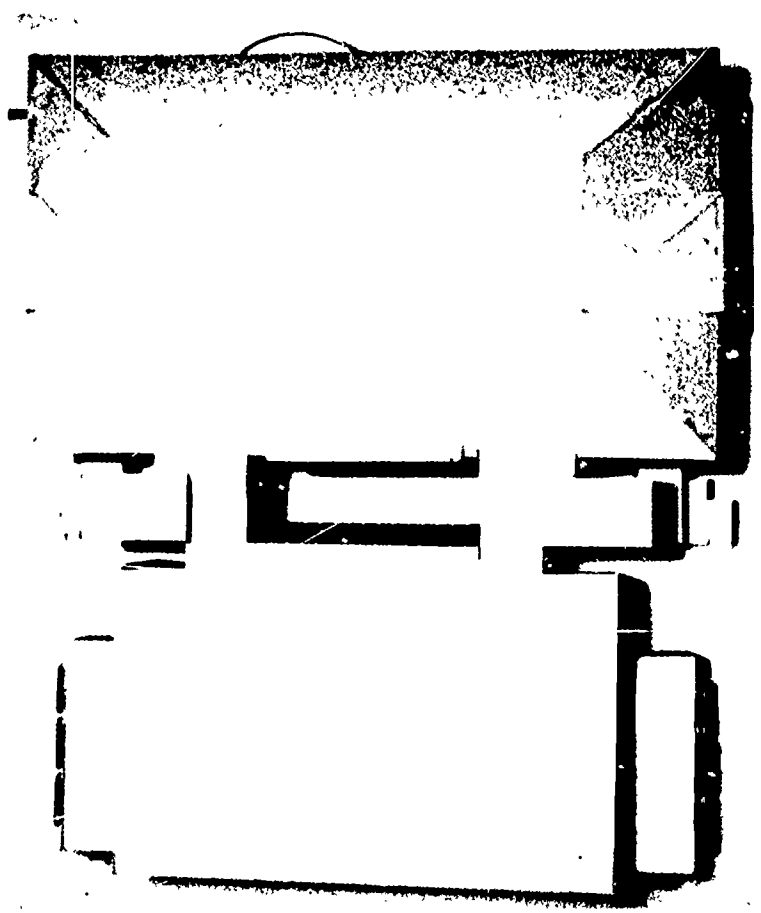
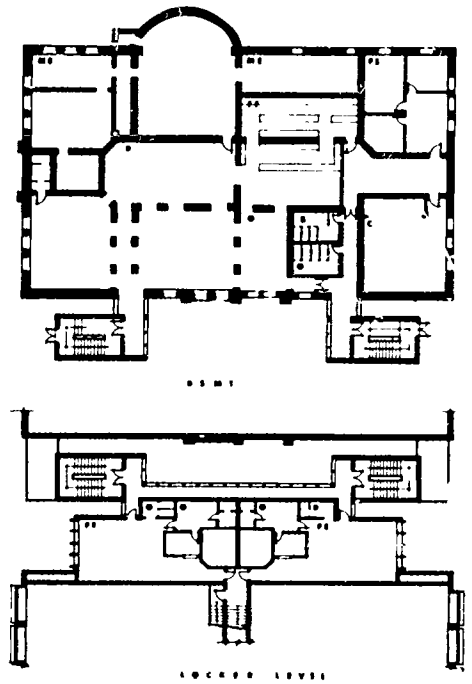
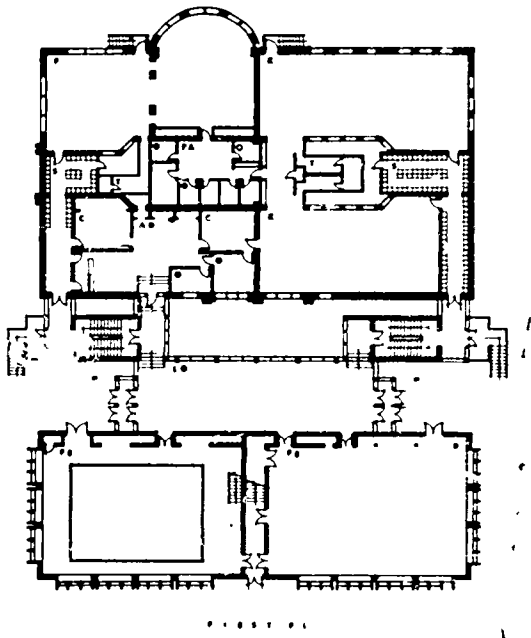




LOWER LEVEL



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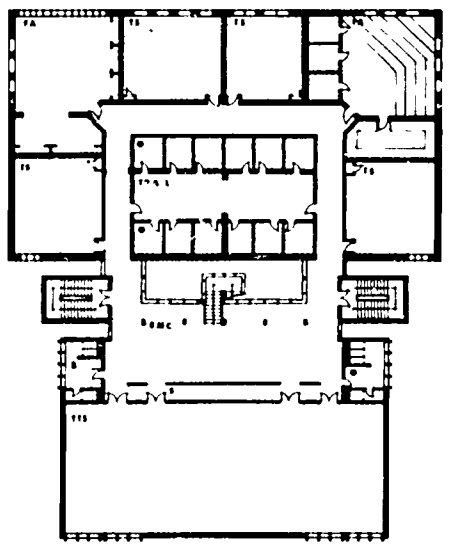

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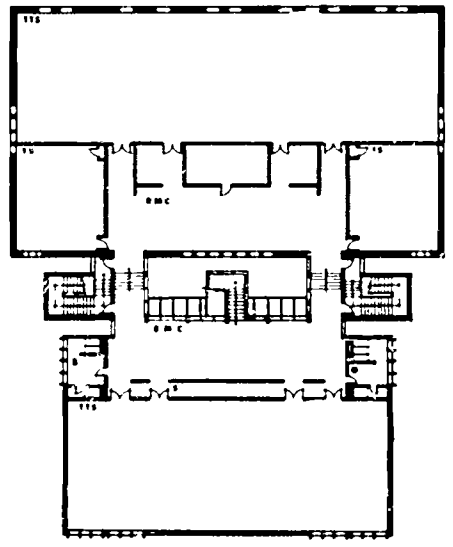

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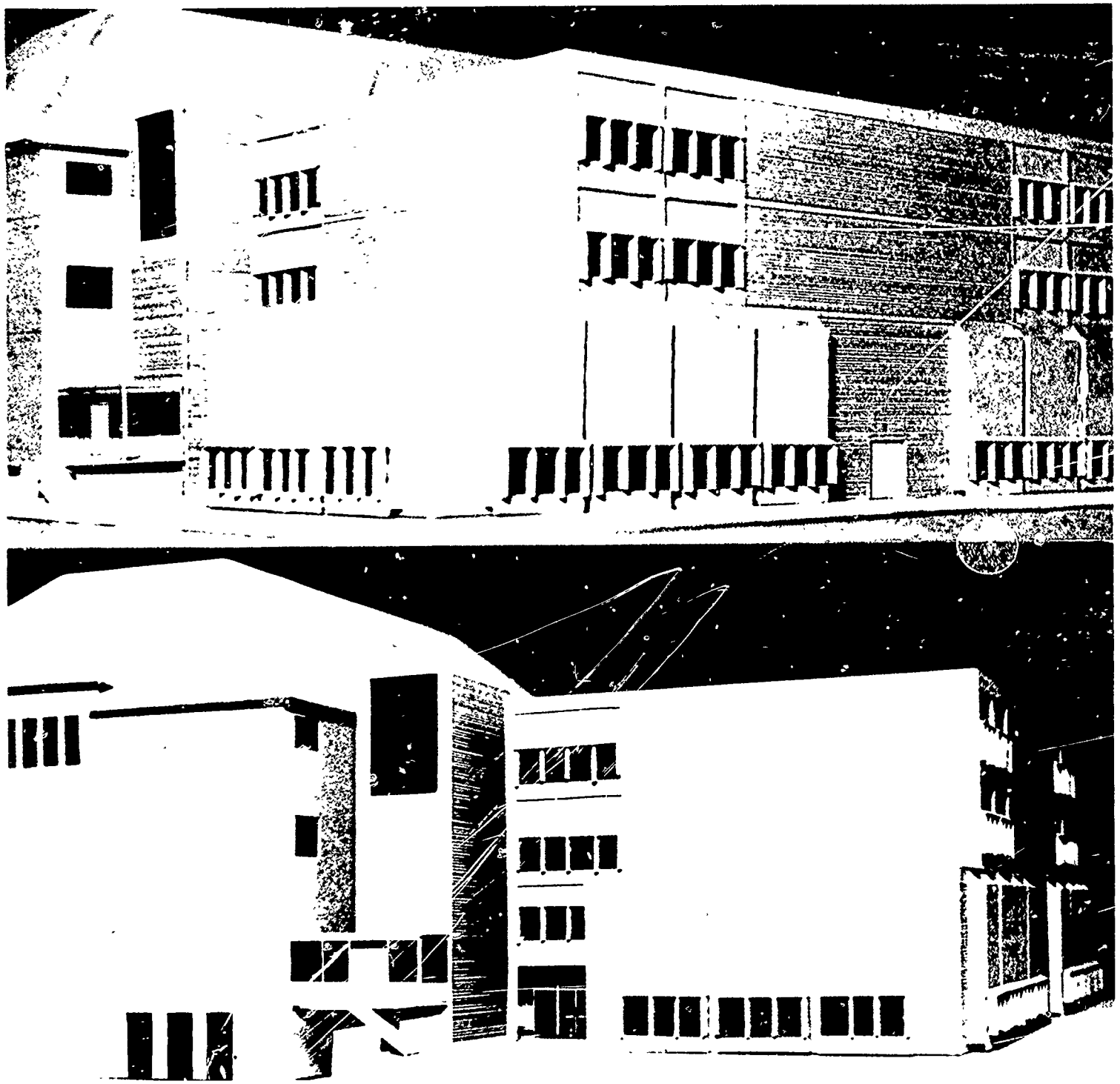

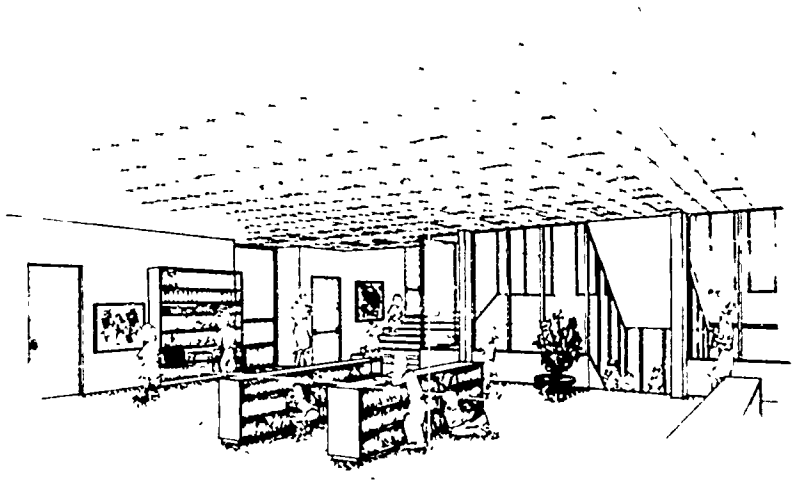

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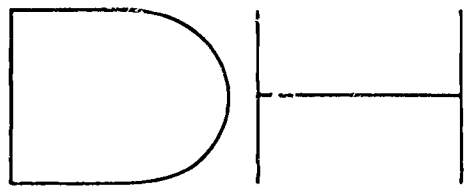
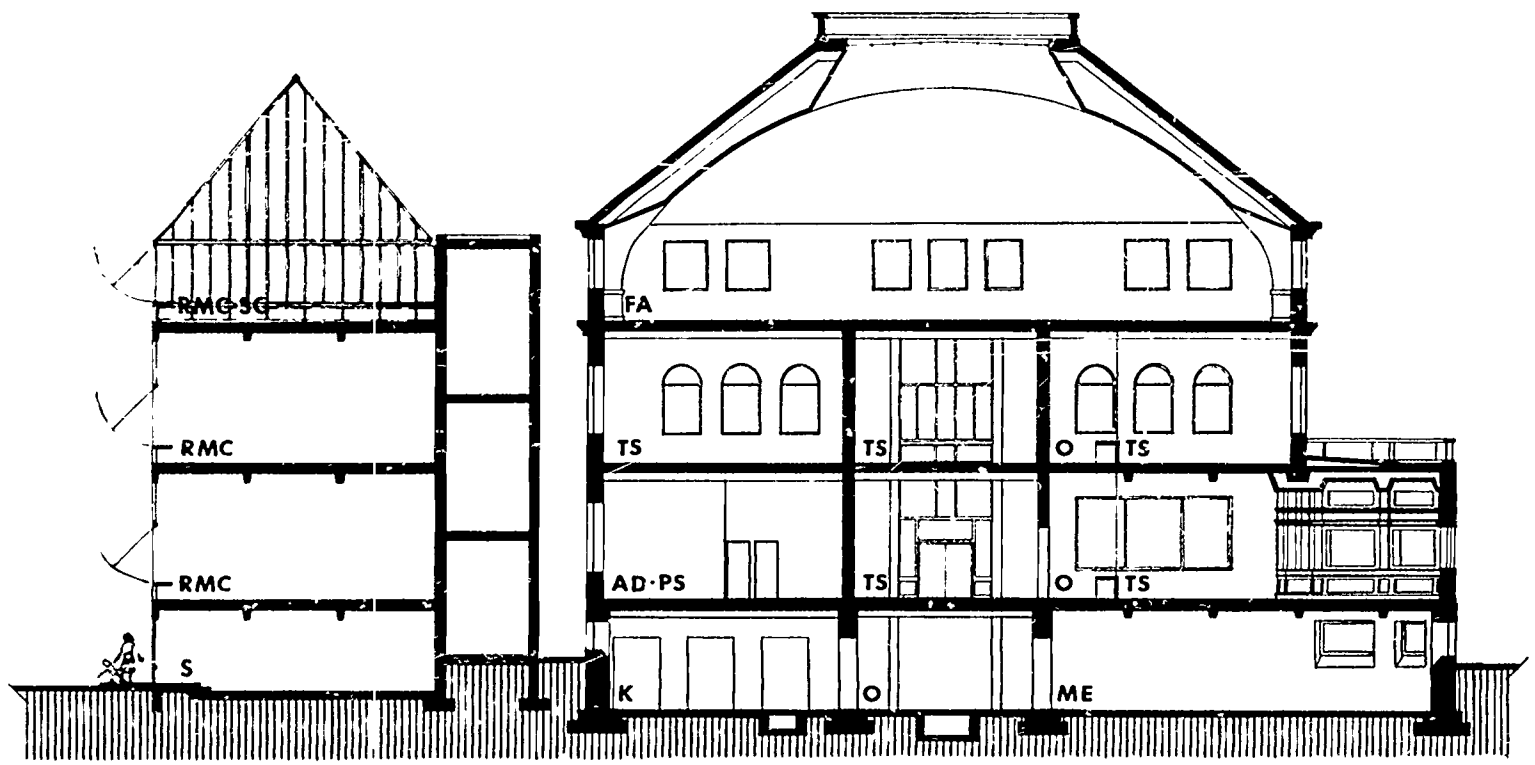
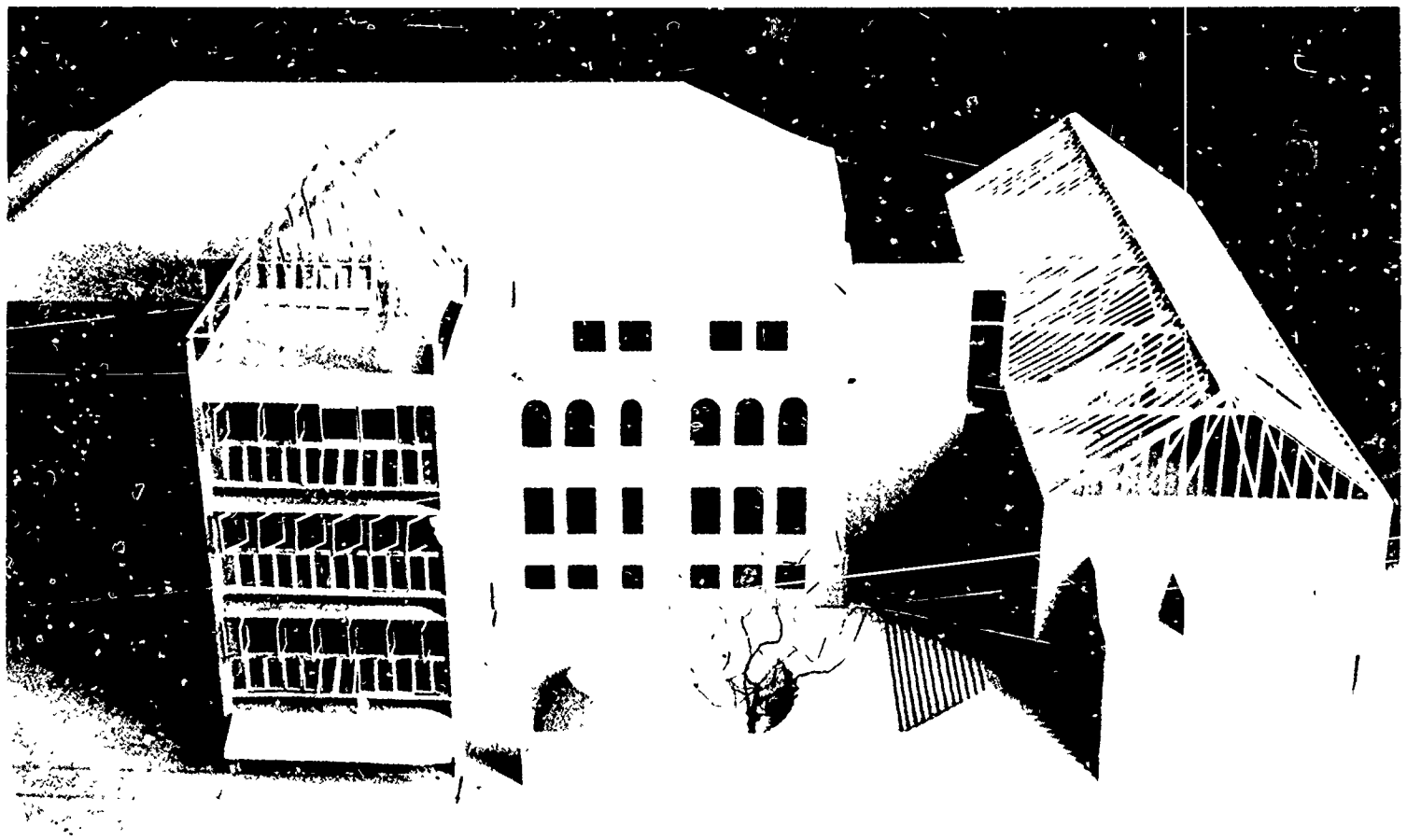
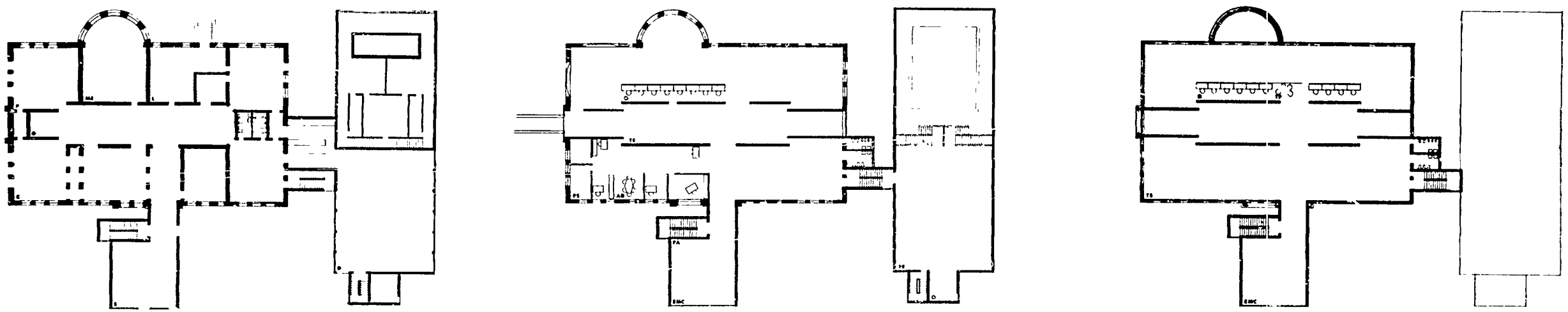


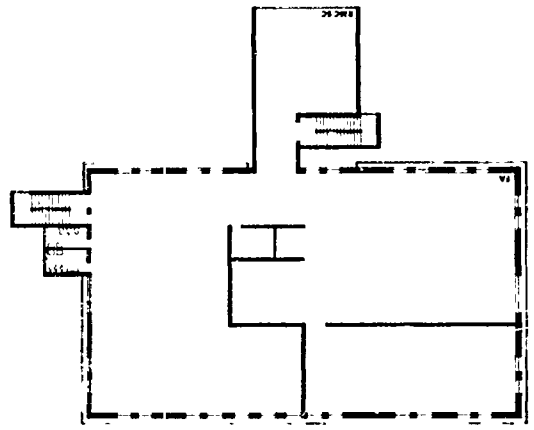


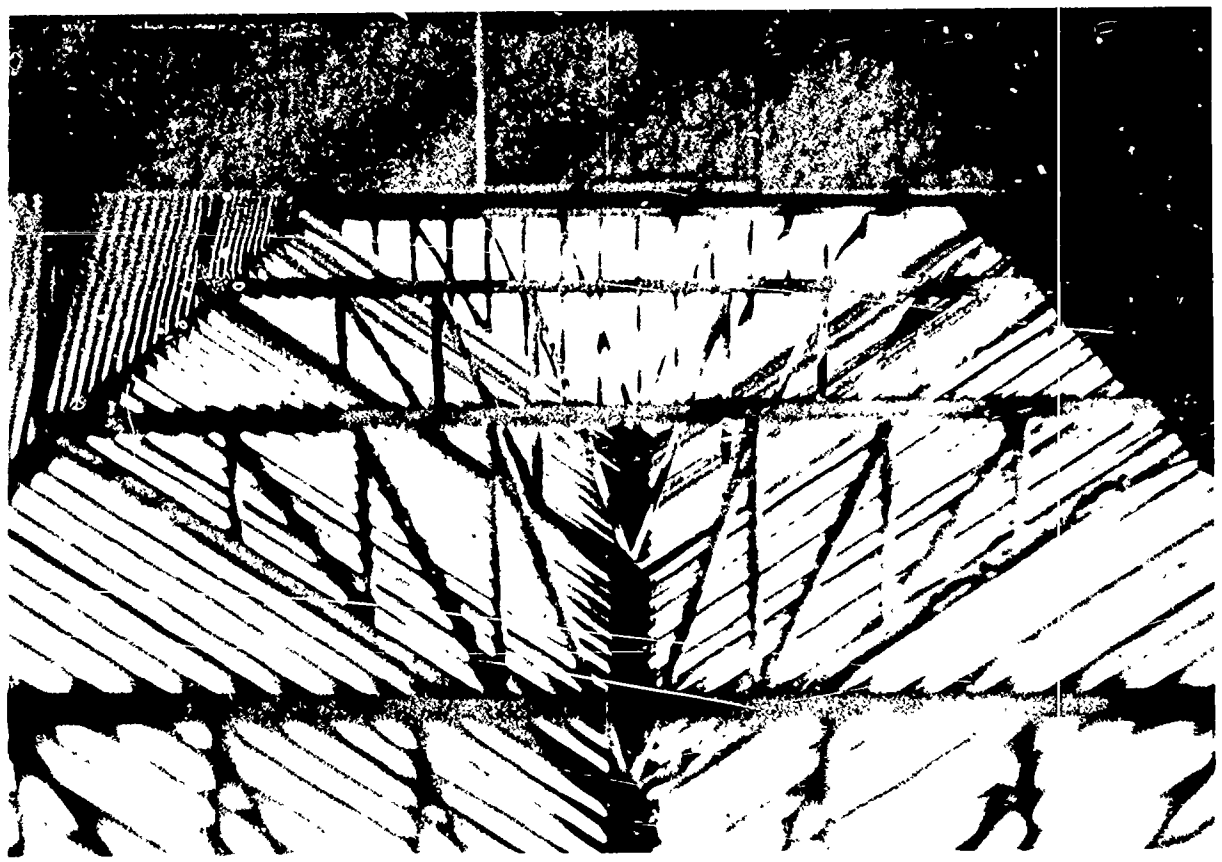
This solution calls for two additions—a resource materials tower with space usable as classrooms, and a physical education cafeteria wing. The latter requires the acquisition of an alley west of the school which is the only additional land necessary to the design. The property within the present boundaries is intensively developed in play areas, on-site parking and fair-weather classroom to form a compact urban unit.

Corridor space in the existing building is converted to teaching areas and walls between the classrooms are removed for greater flexibility in team teaching. Stairwells are in the links between the old and new. The additions connect to the existing structure at only two points to minimize disturbance and dislocation should construction during the school term be necessary. The cafeteria and physical education sections may be used separately from each other and from the main block of spaces for activity outside normal school hours.









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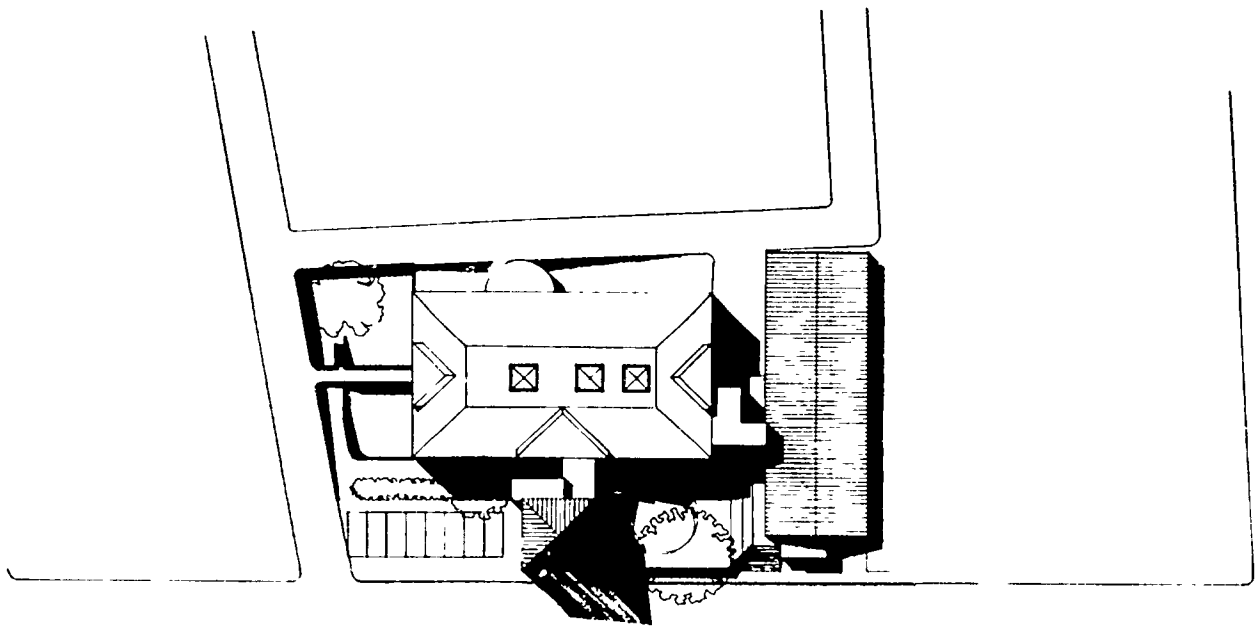

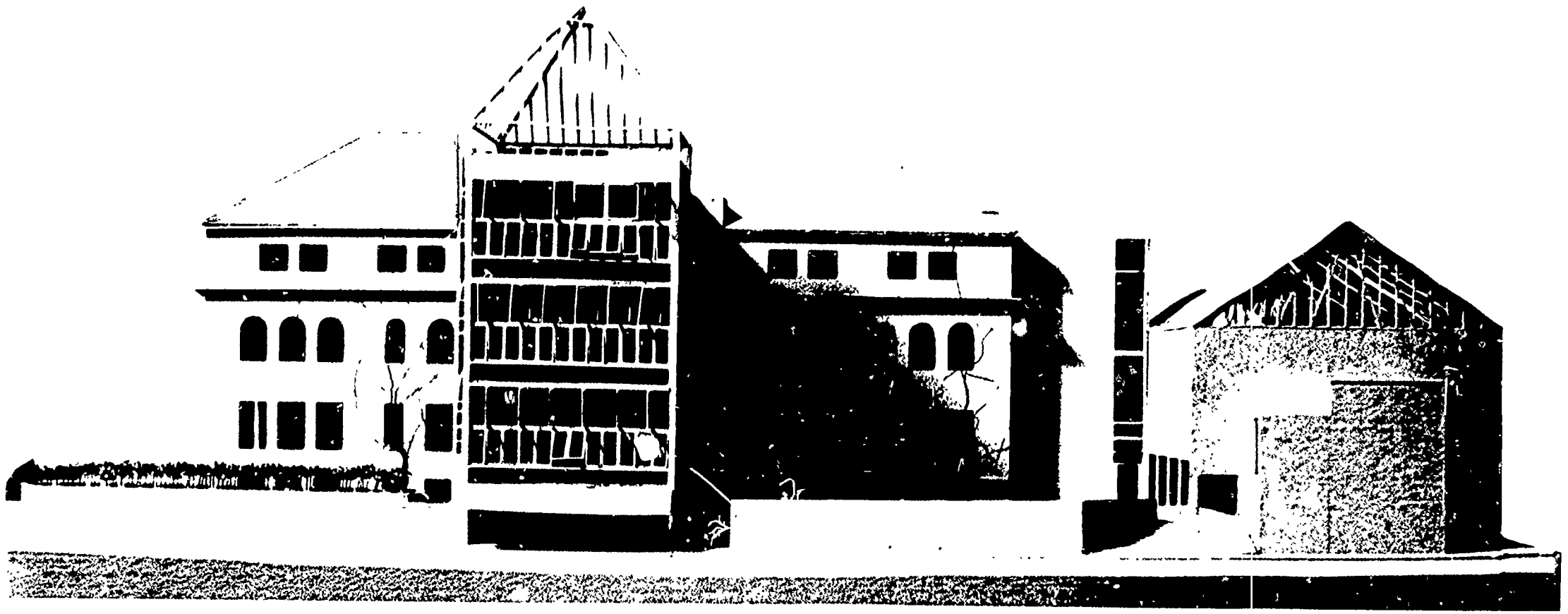

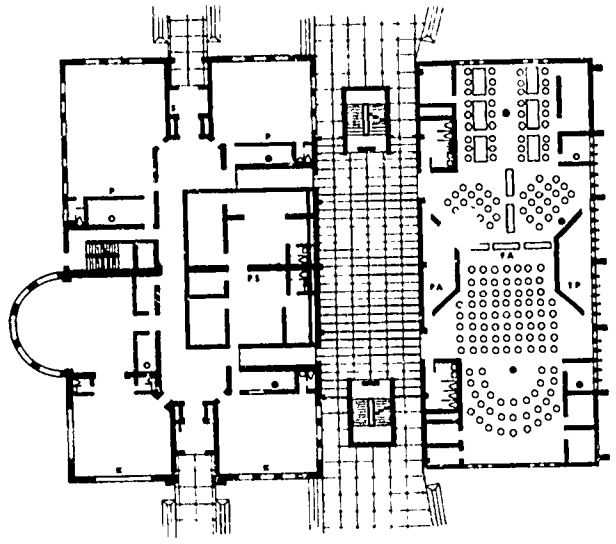

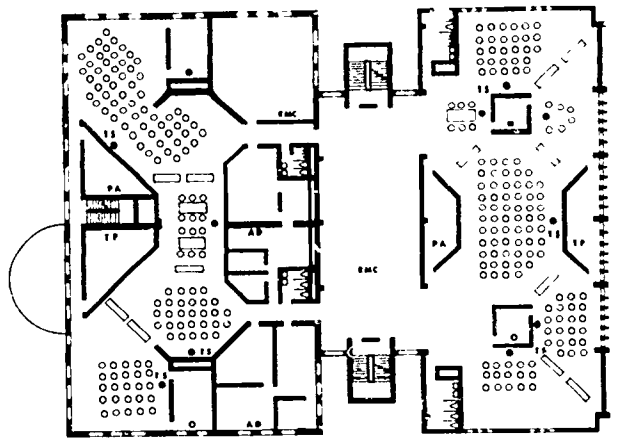

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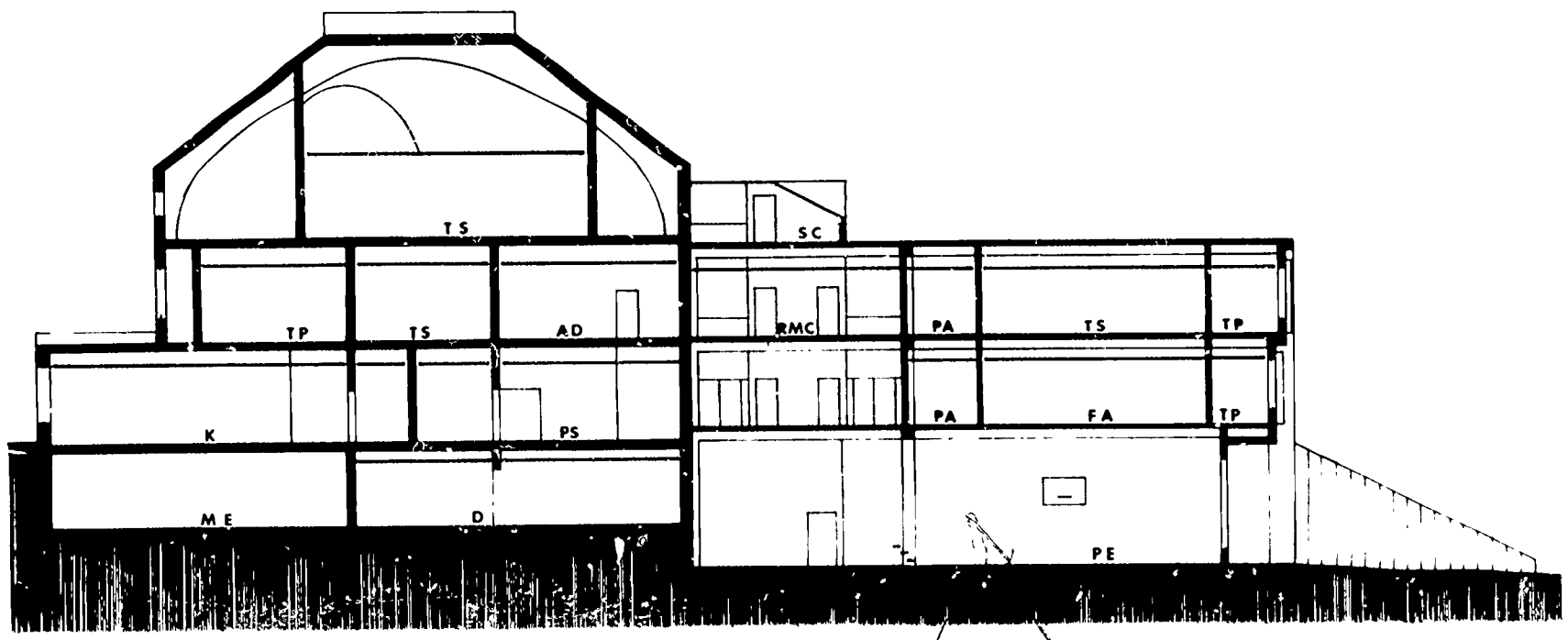

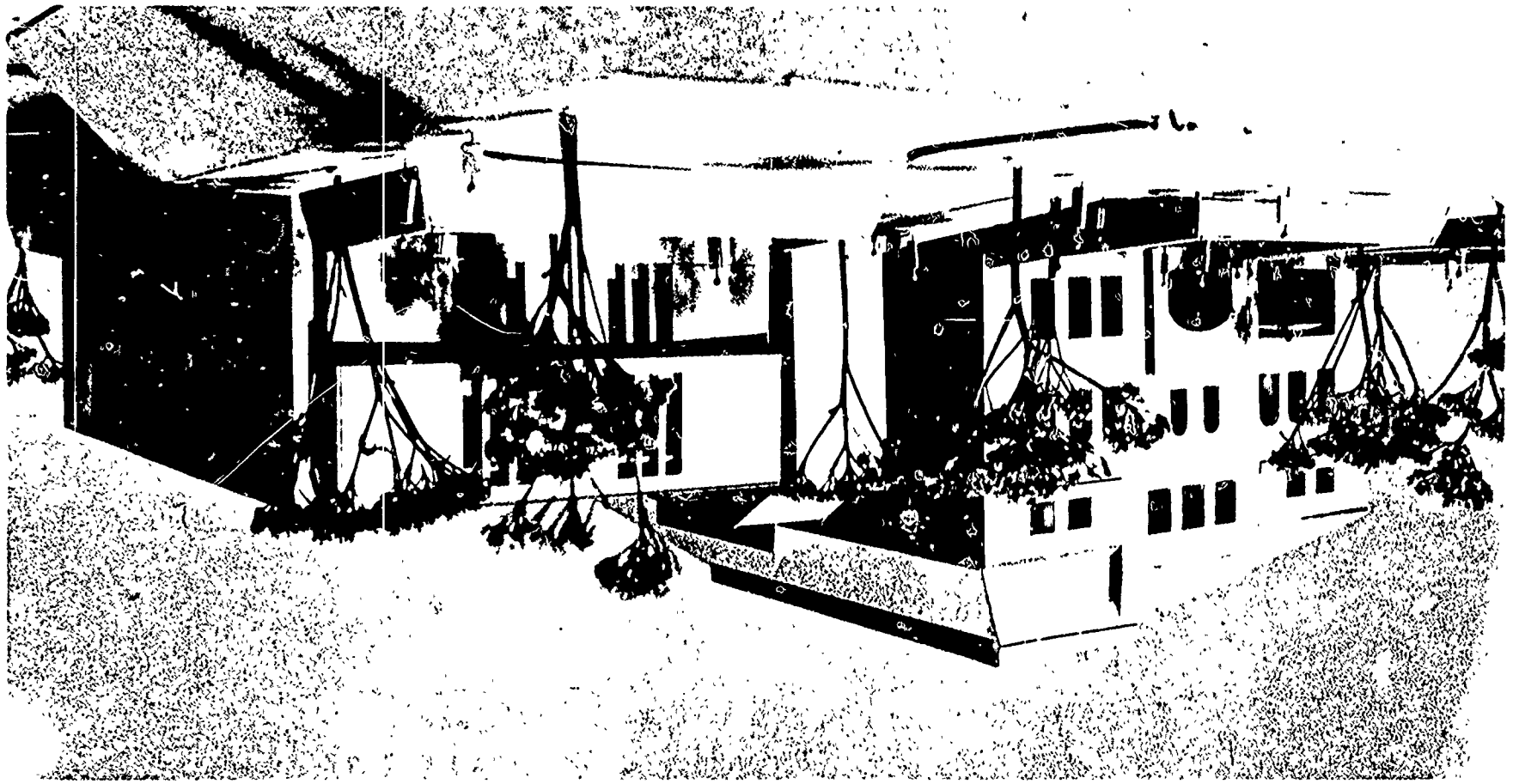

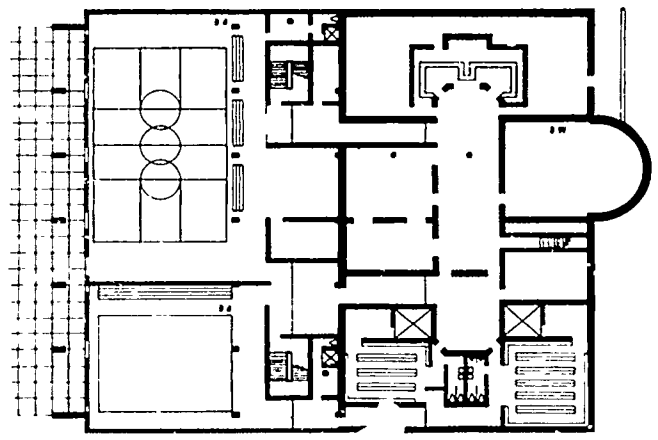

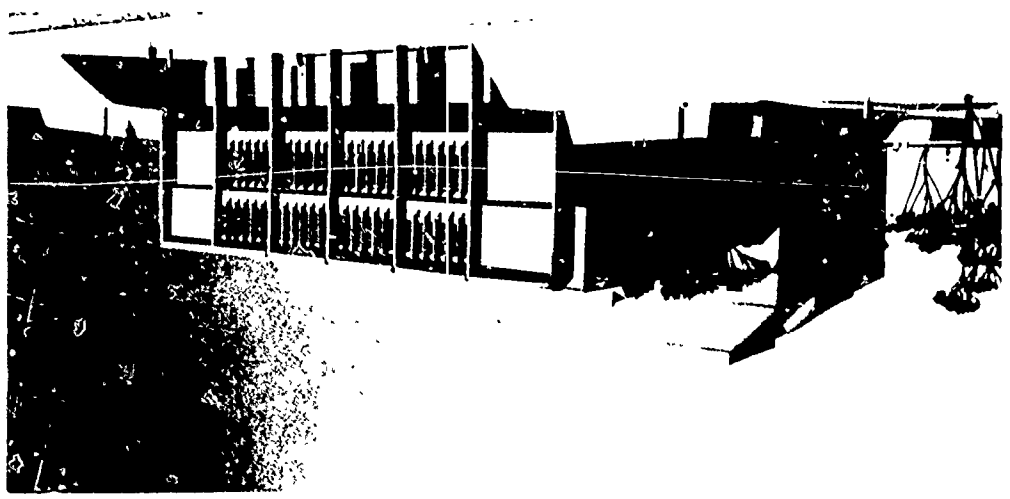

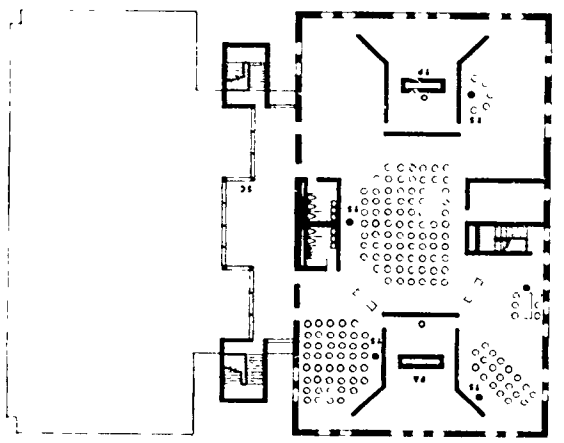

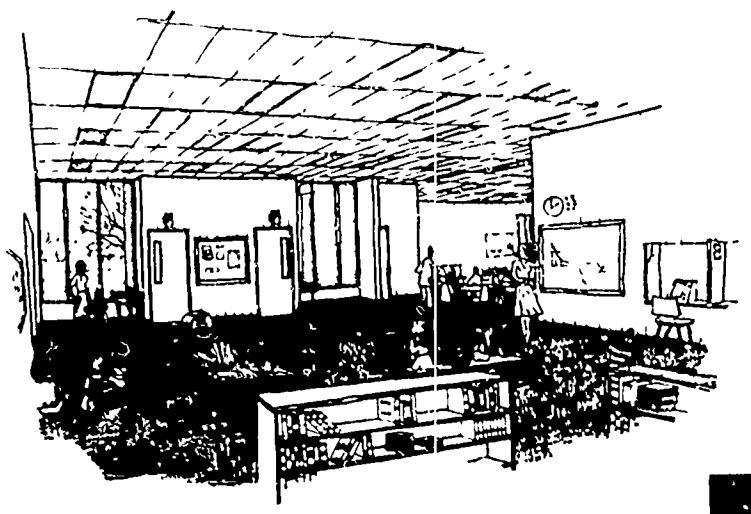

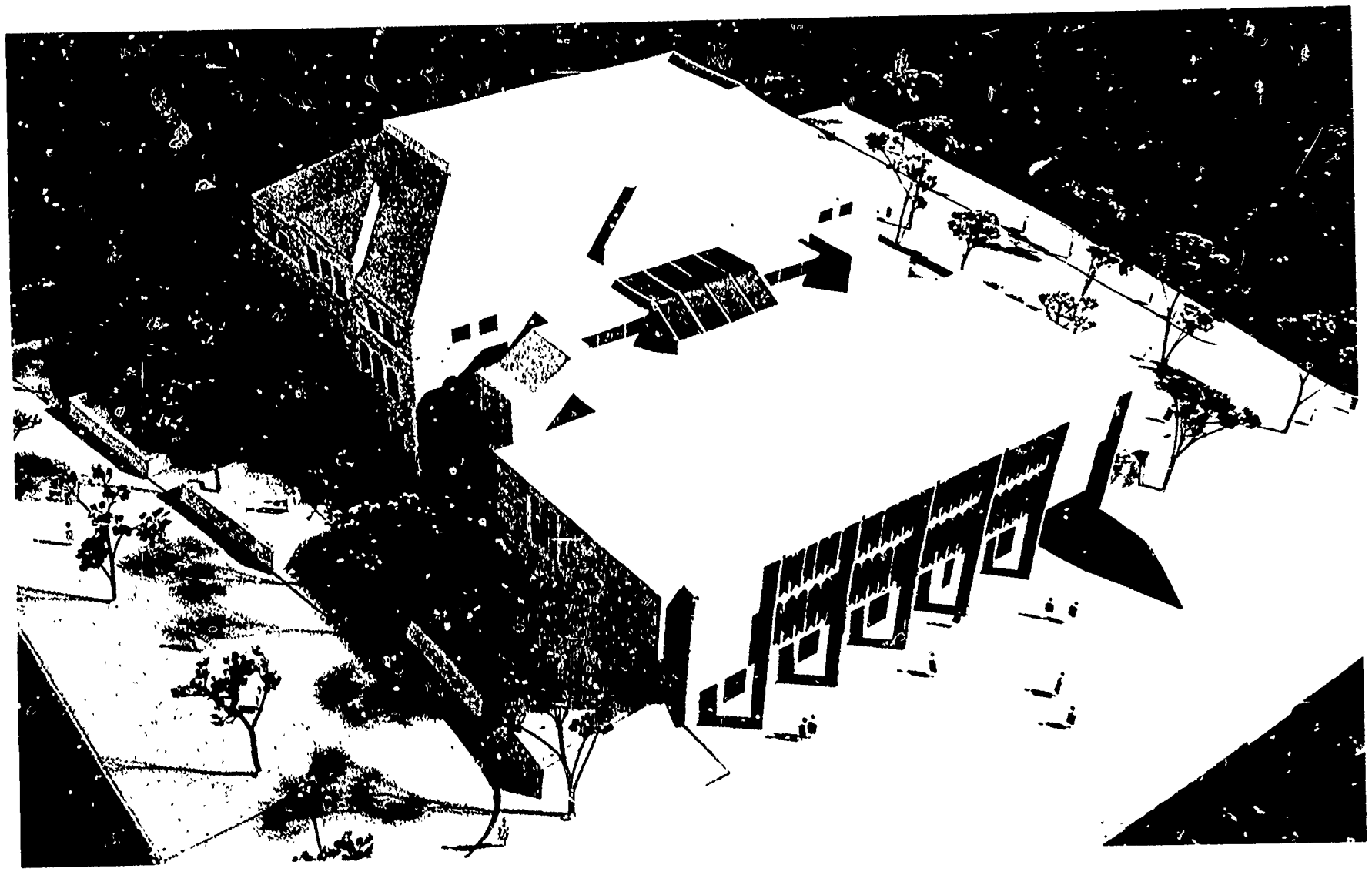

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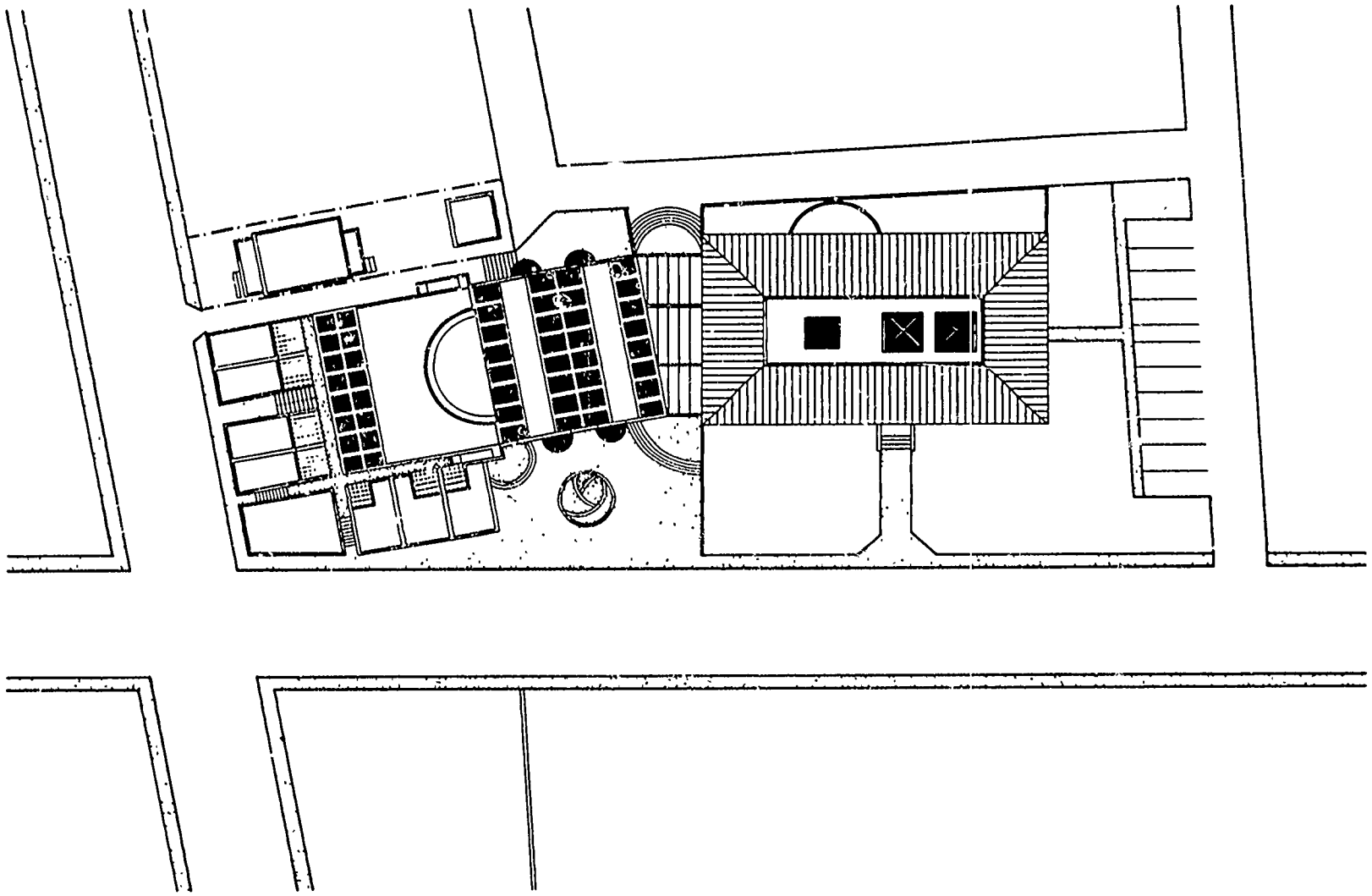
Costs of rehabilitating that which has already a limited life, indicated the necessity to build an addition rather than extensively remodel the old Wightman School.

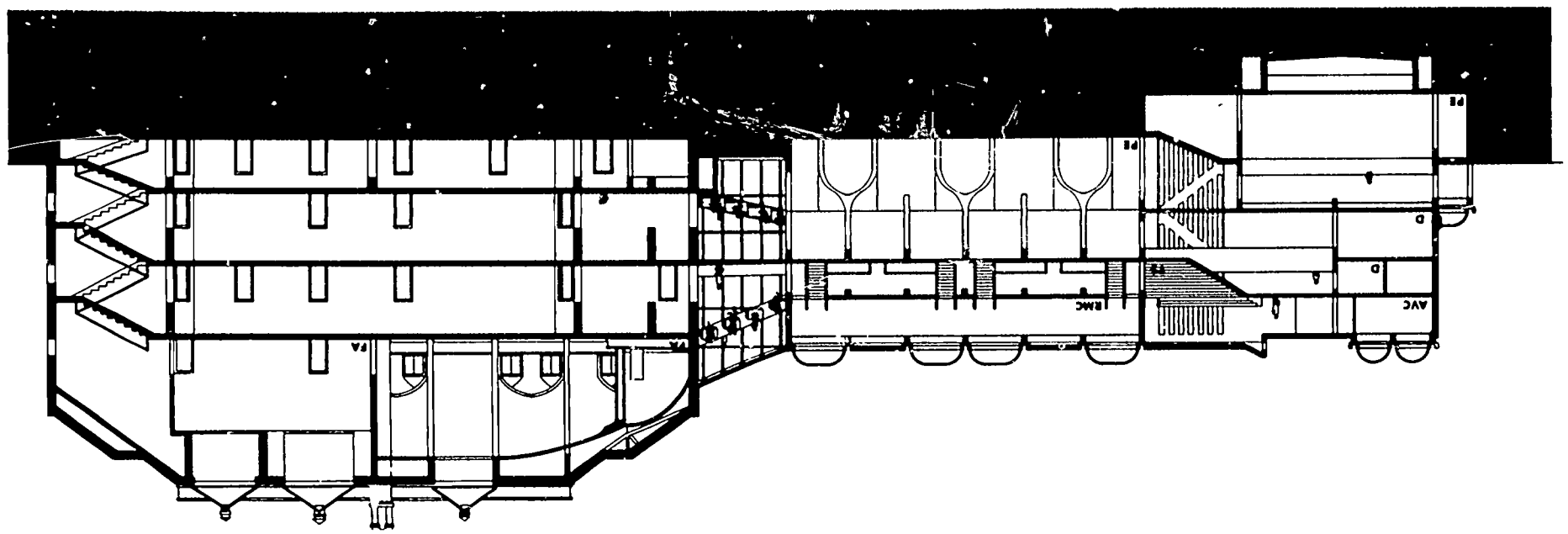
The play fields remain untouched by using available land to the east where surrounding the new additions are small shops on the street level and housing for several teachers above the shops.

The addition contains those activities which are needed to effectively give "New Life to Old Schools," (gymnasium, lockers, swimming pool, cafeteria, and Resource Materials Center). Carpeted steps in the RMC area can be used both for informal reading and study or grouped into five lecture type teaching stations.

The existing school contains the majority of the teacher stations, the administration and the professional services.

The unique spatial flow, while requiring new life in teaching concepts in order to be used most efficiently, stimulates a child's natural responsiveness in a new environment encouraging the learning process.

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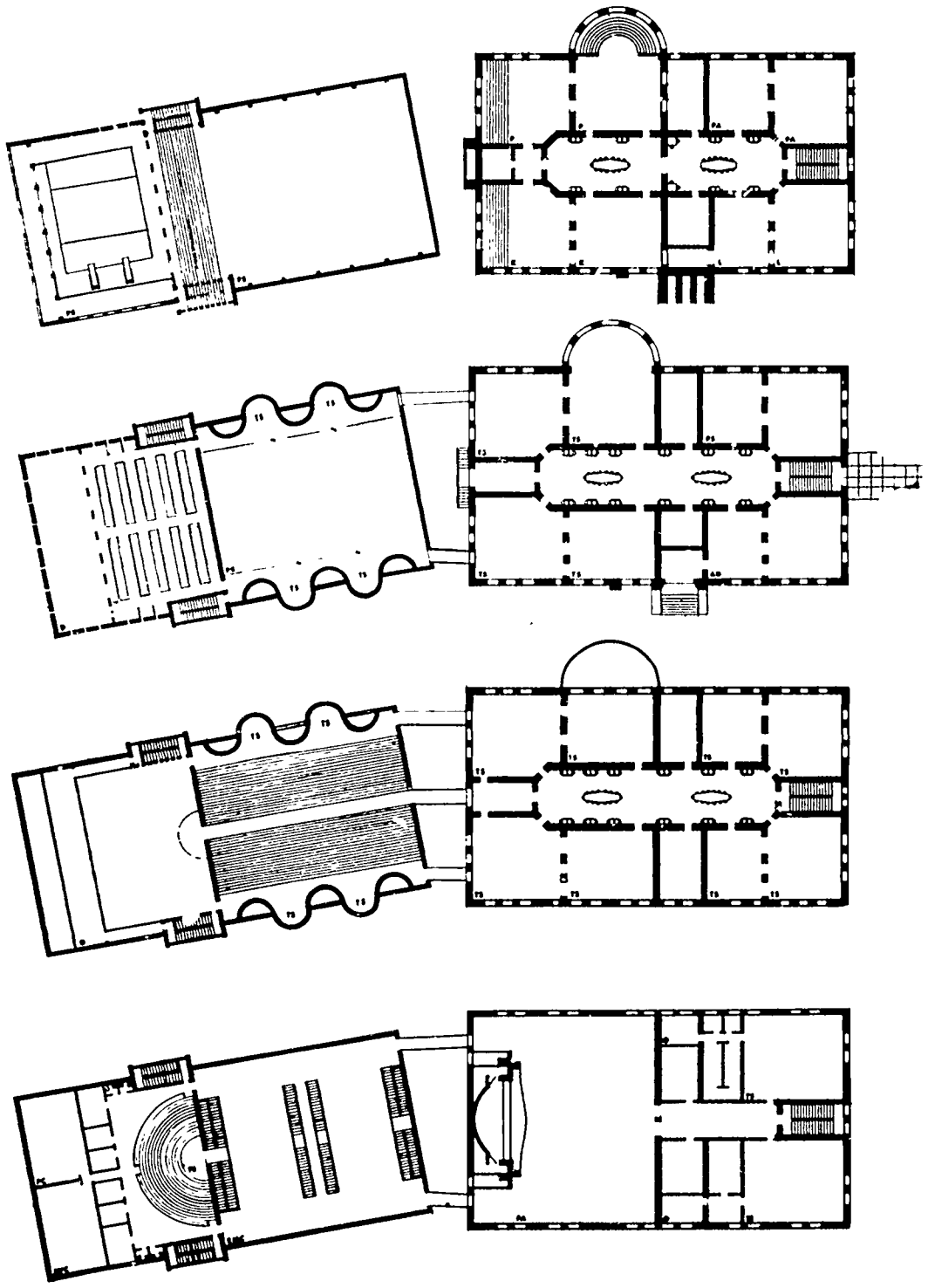

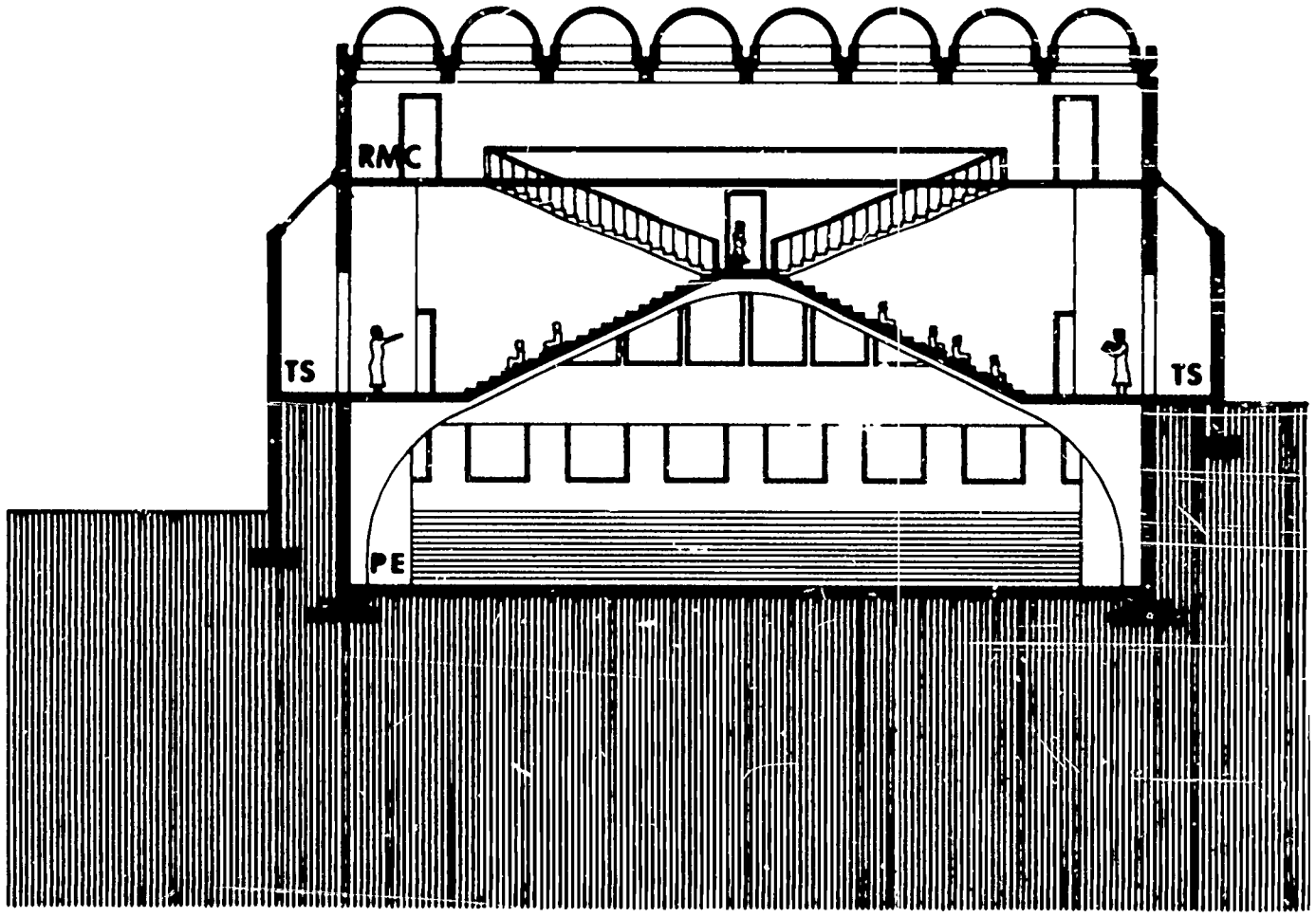
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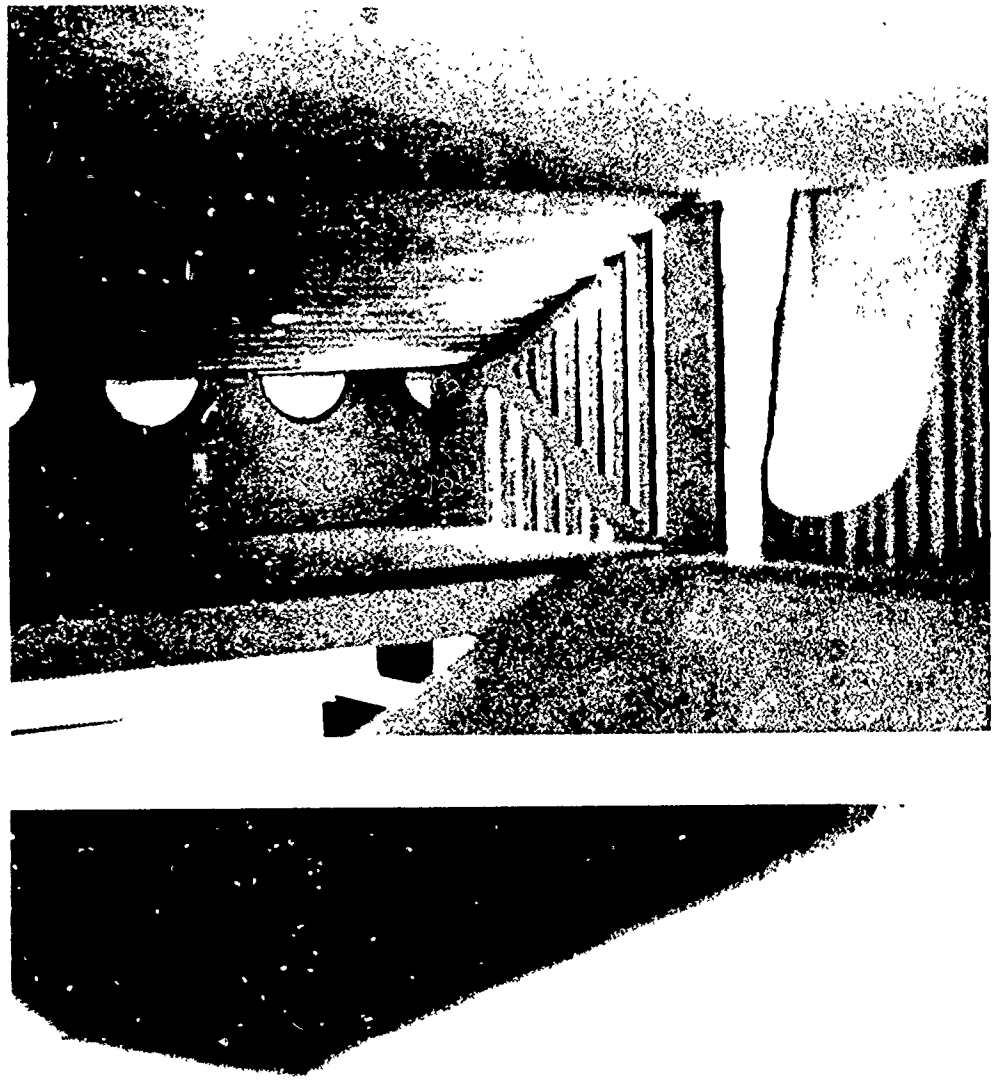

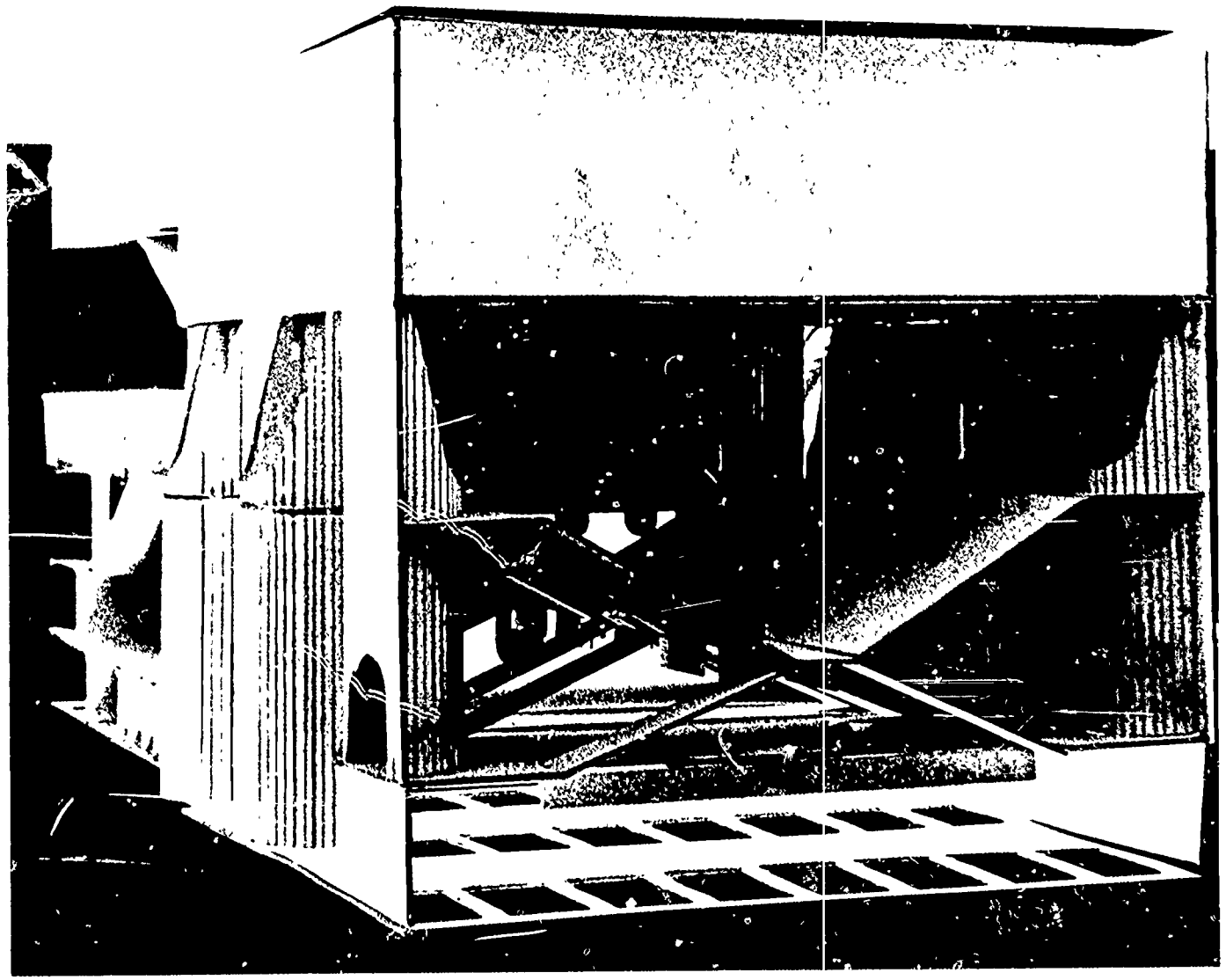

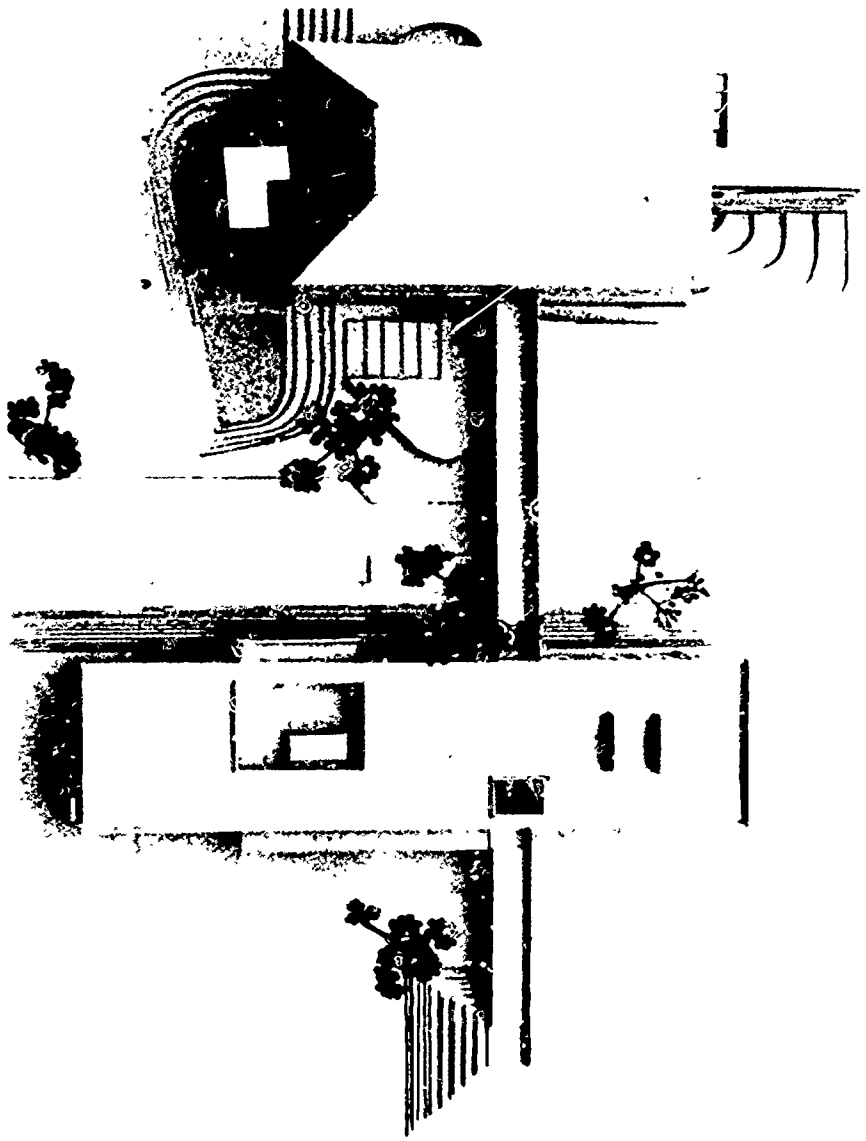

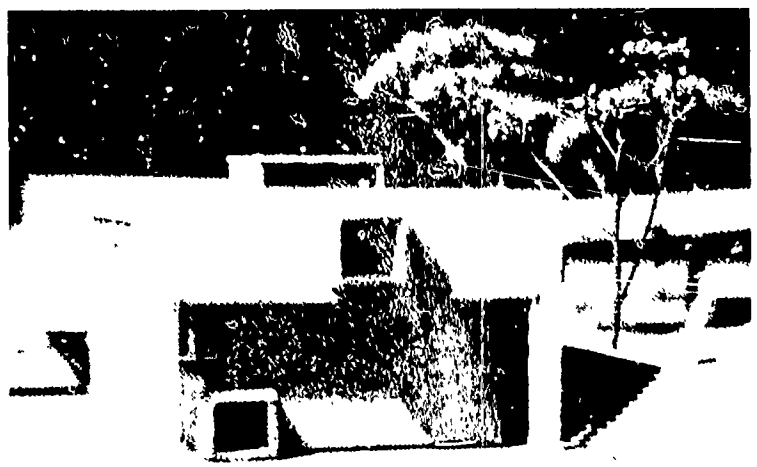

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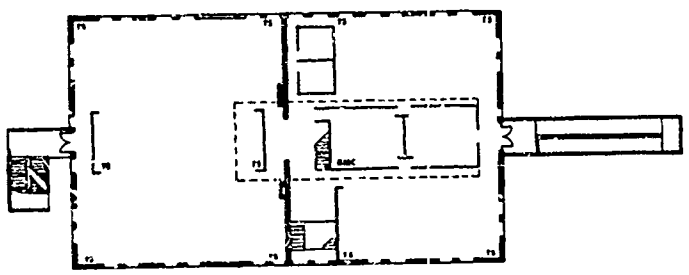

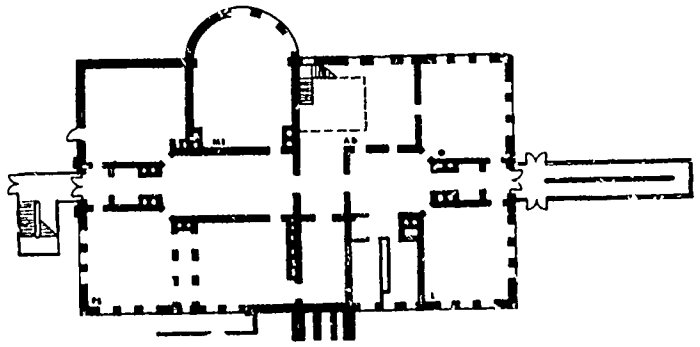

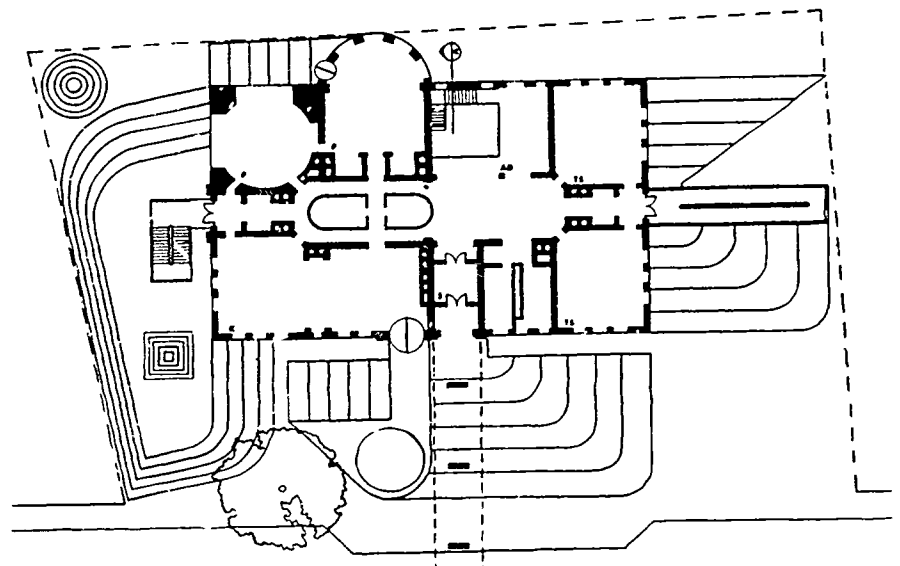

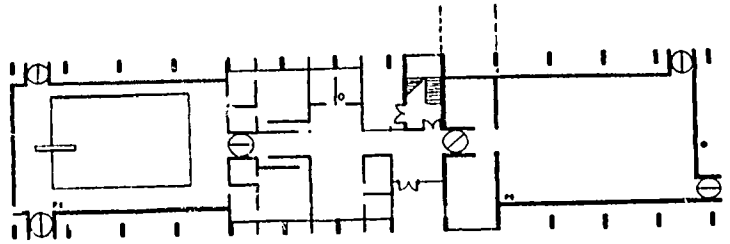

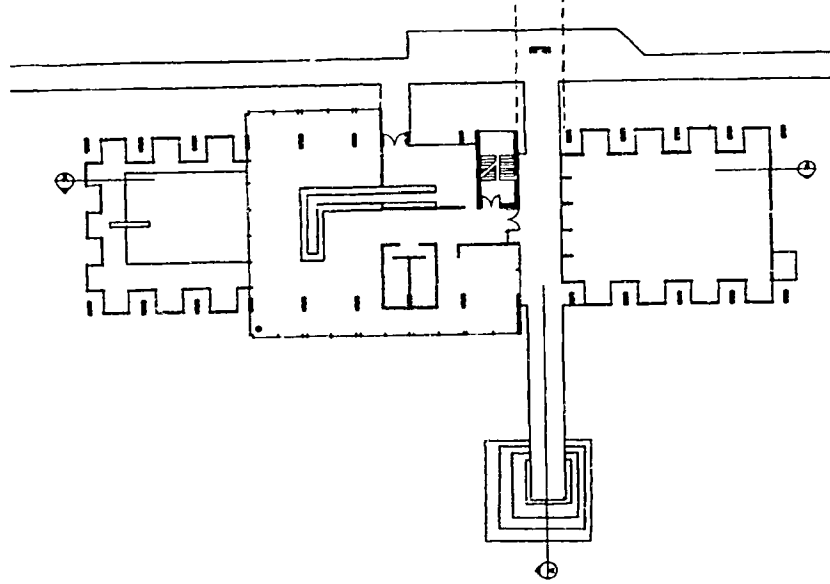

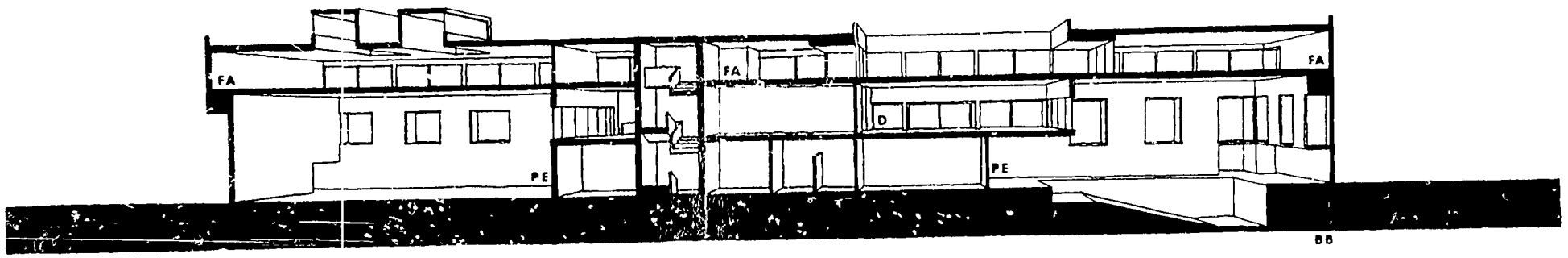
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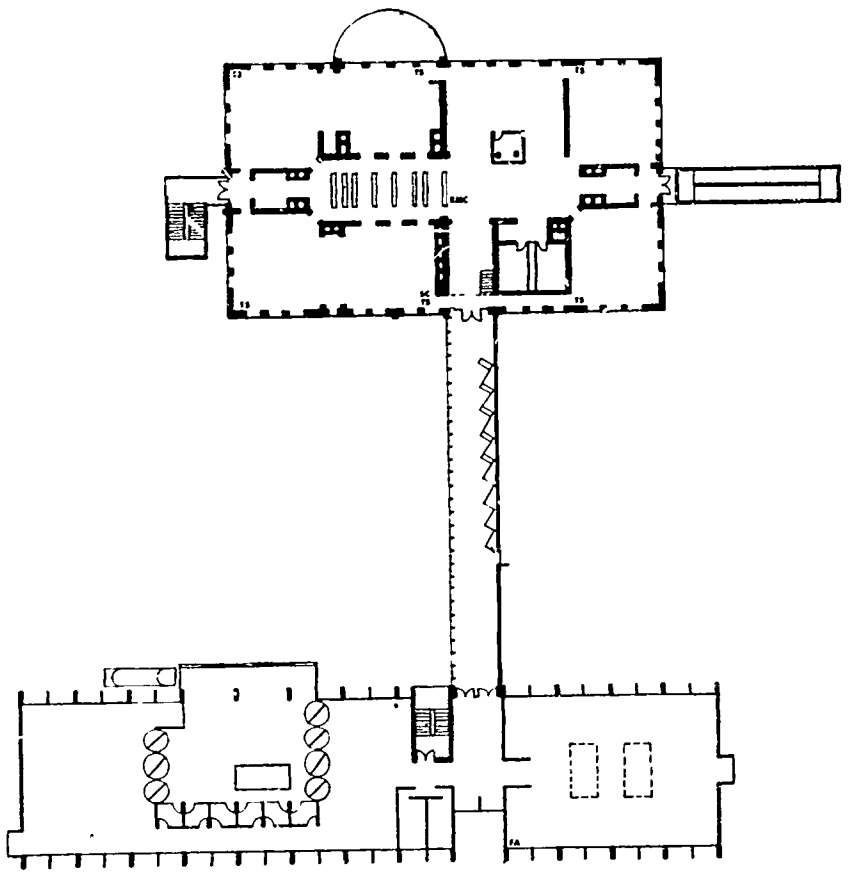
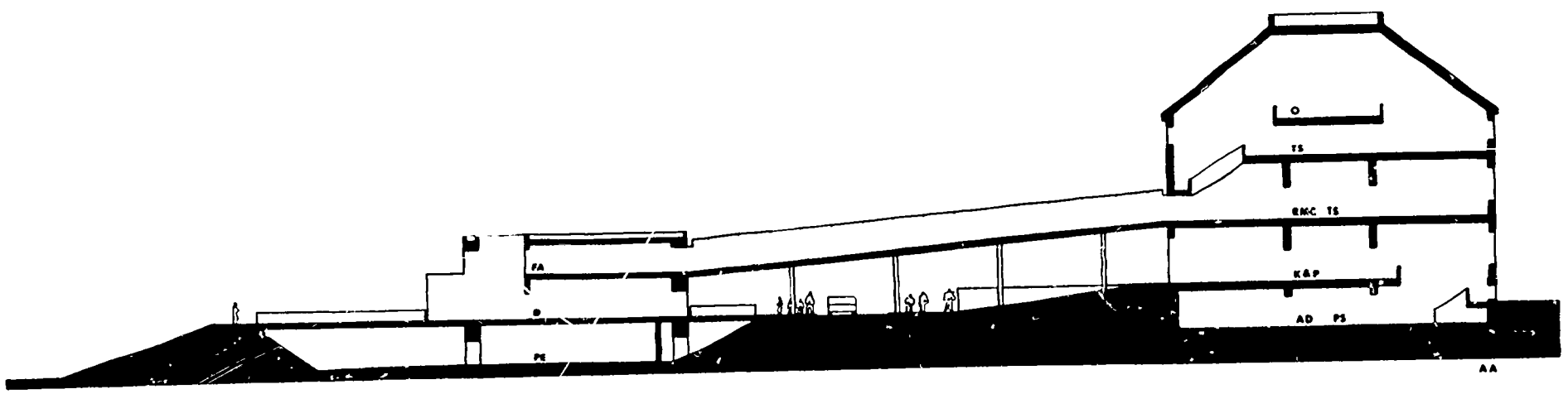




RK

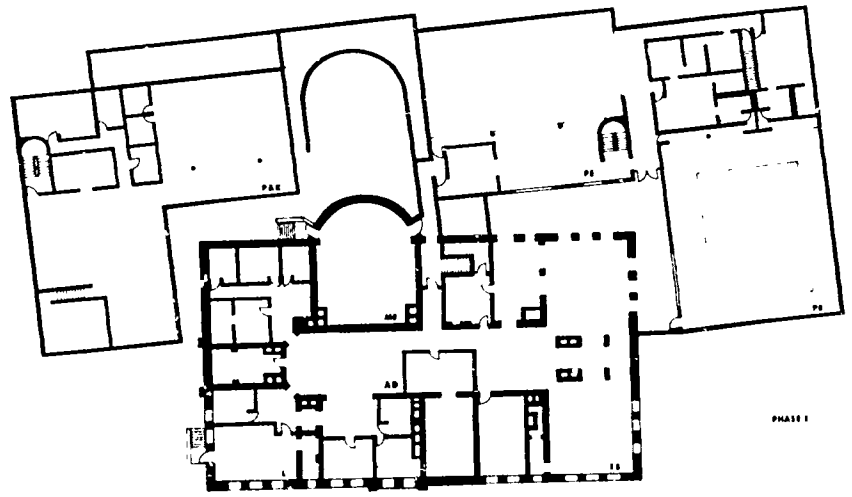
James Kling

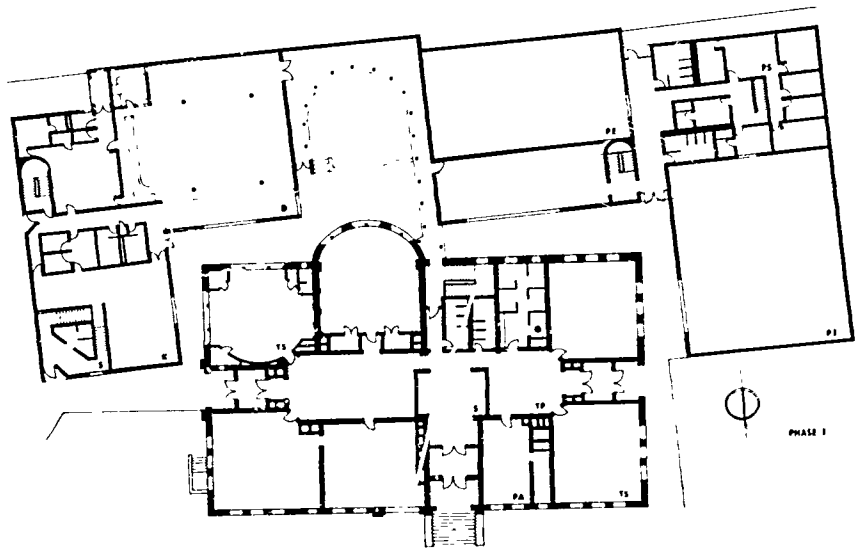
Phase 1

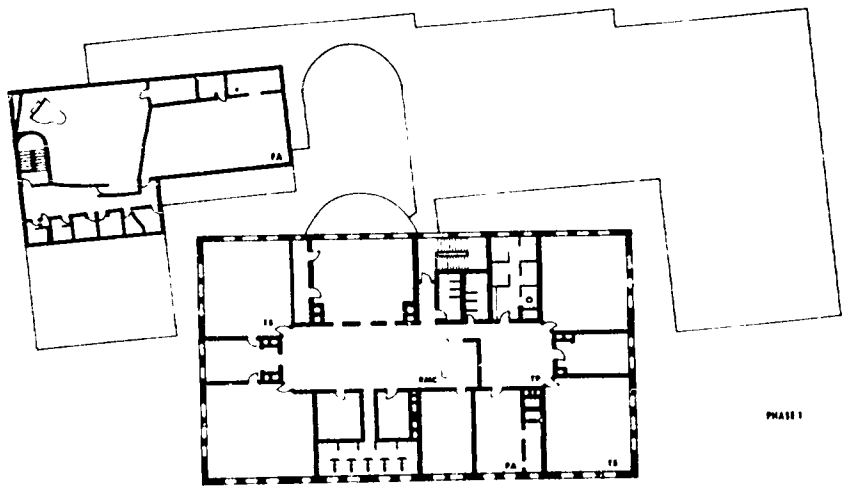
Twelve month program

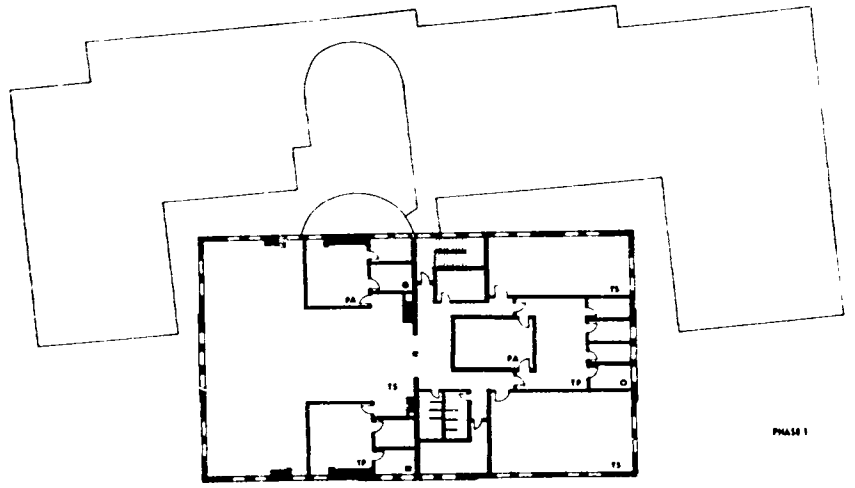
Primary addition—12 months

Alterations to existing facility—3 months









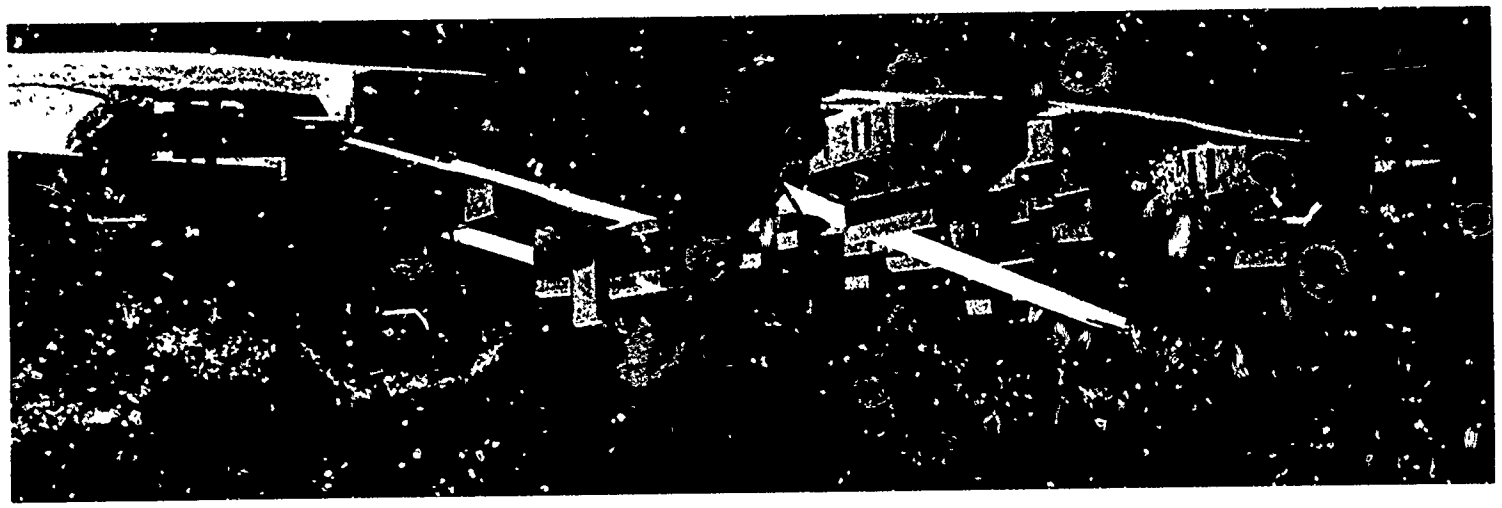
JK

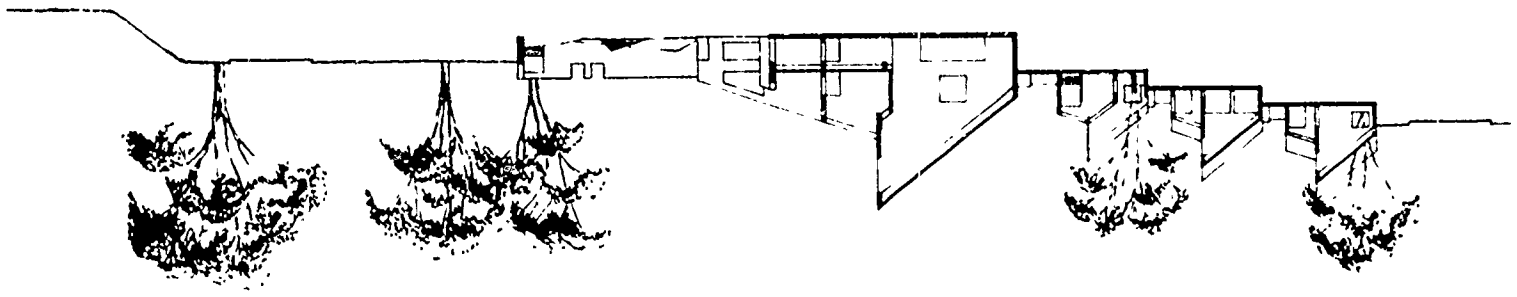
Phase 2

5 year program

Addition of academic facilities

Removal of original structure





PHASE 2

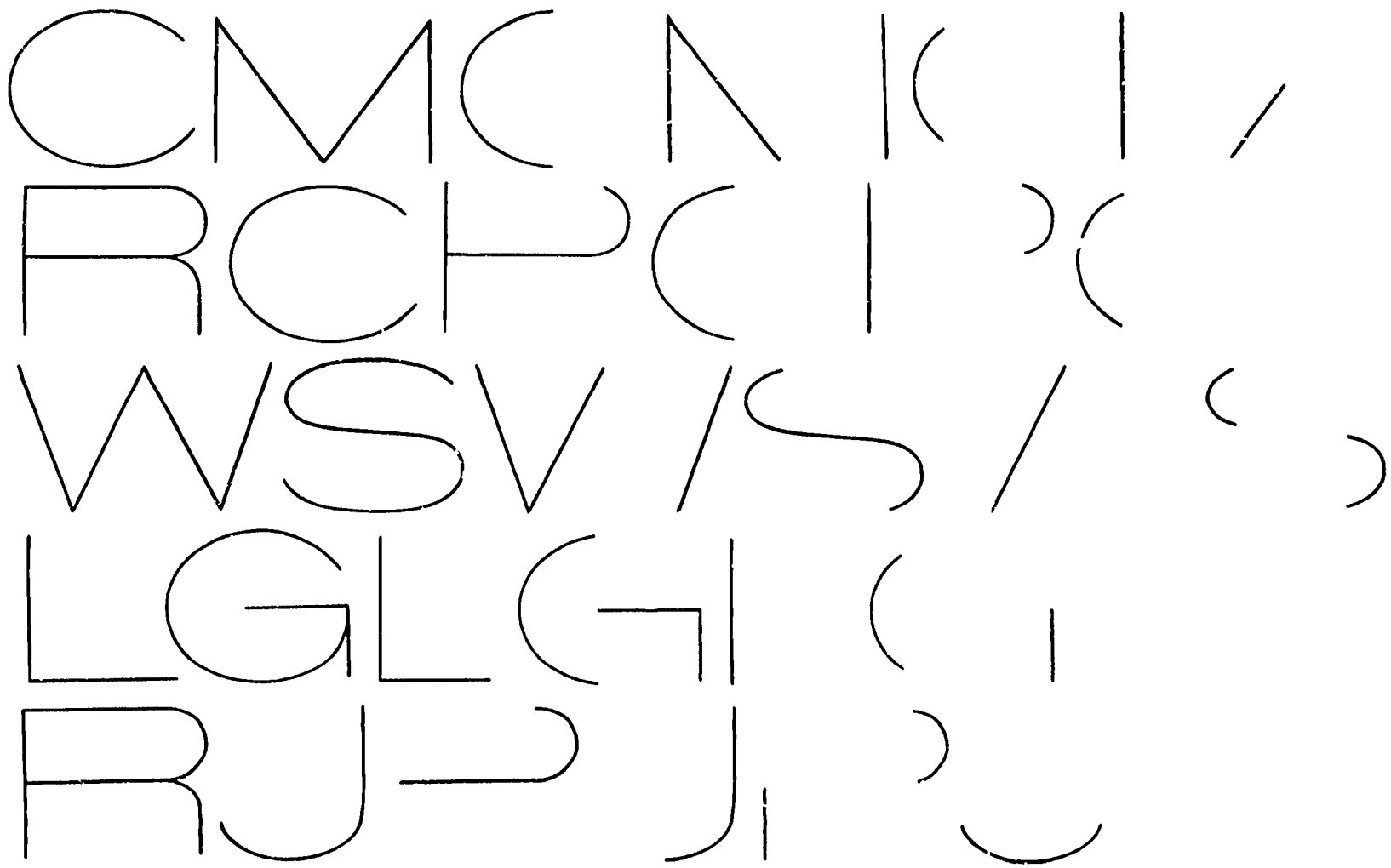
PHASE 1

WOODMONT ST

SOLWAY ST

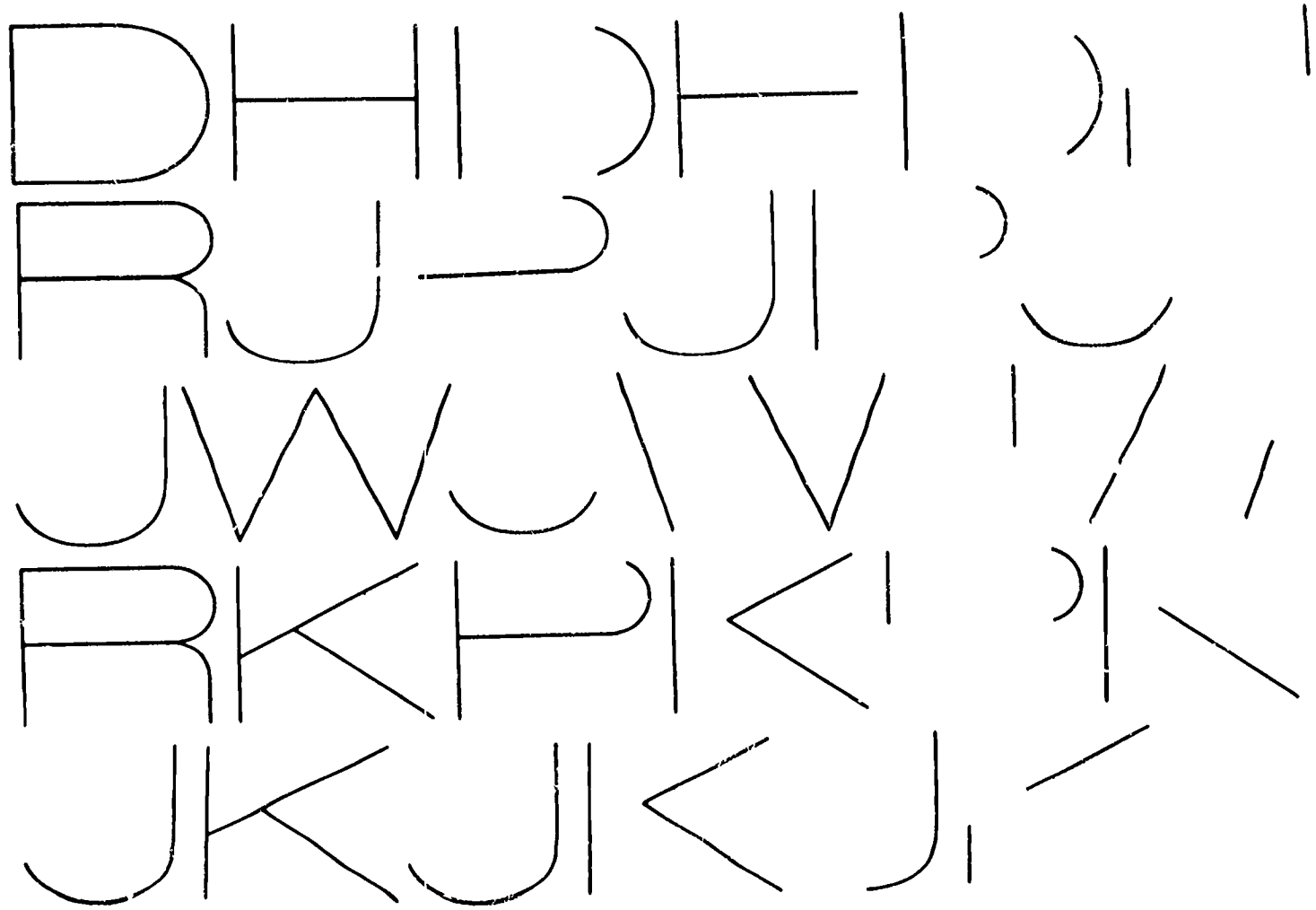
Guide to Drawing Symbols

P	Pre School
K	Kindergarten
TS	Teaching Space
TP	Team Planning
PA	Prep. Area
O	Office
L	Lounge
FA	Fine Arts
PE	Physical Ed.
SC	Science
D	Dining
PS	Professional Service
AD	Administration
S	Scuff Area
ME	Mech. Equipment
GS	General Storage
T	Toilet
LGI	Large Group Instruction
MI	Music Instruction
RMC	Resource Materials Center
ES	Equipment Storage
LR	Locker Room
FP	Food Preparation



Photography—Thomas Warnock
Barbara Runnette
Stephen Byers

Book design—C. Jones



Publications

Reports issued as part of the "New Life for Old Schools" study are available from The Research Council and include:

"New Life for Old Schools"
Originally published in June, 1965, and now in its second printing, this is a 100-page report on a workshop for representatives of the Great Cities in relation to the Spring, 1965 Conference of the Research Council of the Great Cities Program for School Improvement.

Newsletter
A limited number of back issues of the Newsletter are available. Future issues will be mailed to interested parties on request.

"Pittsburgh Design Study—The Liberty Elementary School"
A report of a cooperative study with the Pittsburgh Board of Education and the Department of Architecture, Carnegie Institute of Technology.

"New Life for Old Schools—an interim report"
A 20-minute, sound, color, motion picture showing examples of good school modernization currently completed or under construction.

Single copies of the above reports, and additional copies of the Wightman Elementary School Design Study and information on how to schedule the motion picture are available from The Research Council of the Great Cities Program for School Improvement, 5400 North St. Louis Avenue, Chicago, Illinois 60625.